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COLLODIO-ALBUMEN
PROCESS,
AND OTHER PAPERS

BY J. MUDD

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**COLLODIO-ALBUMEN PROCESS,
AND OTHER PAPERS.**



THE
COLLODIO-ALBUMEN PROCESS,
HINTS ON COMPOSITION,
AND OTHER PAPERS.

BY
JAMES MUDD.

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P R E F A C E.

I HAVE frequently been desired to collect and republish the following scattered papers, which, at long intervals, have appeared in the photographic journals. Having consented, at last, to do so, I scarcely knew where to find them ; but a friend, who, unlike myself, had preserved the journals for many years, kindly provided me with copies. I found the Collodio-Albumen Process described, in a paper written six years ago, much as I practise it now ; but it will be seen I have entirely re-written and enlarged it, entering into details which will, I trust, make it more useful to the reader.

I am glad of this opportunity of stating that, in one or two of the lighter papers—"The Photographer's Dream," published a year ago, and in the "Confessions," which appears now for the first time—it is far from my intention to hurt the feelings, or caricature, maliciously, the inventions of my brother photographers. I should scarcely have thought this explanation necessary had I

not heard that some persons, quite unknown to me, and to whom, therefore, I could not have pointed in the "Dream," had taken great offence, considering themselves personally ridiculed in that "*jeu d'esprit*." Let me assure those gentlemen, and any others who may misinterpret the spirit of these papers, that they are only intended as playful satires, to be received as good-humouredly as they are written, and that no unkind feeling prompted a single word. I need say no more. Instead of sneering at, or undervaluing, any man who contributes to the advancement of our dear Art, whether it be in the mechanical, chemical, or other department, I appreciate as highly as anyone both the man and his work, and heartily cheer him on. But still we may laugh. Surely, while engaged in our "too, too solid" labours, we may "melt" now and then, and be all the better for it! In this temper these pieces were written, and in the same spirit, I trust, they will be received.

JAMES MUDD.

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THE COLLODIO-ALBUMEN PROCESS.

THE Taupenot, or Collodio-Albumen, Process is one of the oldest and best known of dry processes ; and although many years have elapsed since its discovery, it remains, with the exception of some slight modifications in development, substantially the same as at first. It is a process which cannot be taken up for a few days and then cast aside for something else, but must be thoroughly understood and largely practised. It then becomes most certain in results, so that out of fifty plates exposed on a tour, there need not be one failure. This can scarcely be said of any other dry process. Without, however, comparing it with others, or entering into discussions of its merits, or entangling the reader with speculations or theories, I propose, in the following pages, simply to describe, as clearly and fully as I am able, the process as practised by myself at this moment, and this without assuming that my ways are the best. There are many ways of doing things ; for instance, in cleaning plates, in draining, or drying them, there are various methods which may be better than mine ; indeed, I am sure there are, for I have never given much attention to these things merely mechanical ; still, imperfect as they may be, I will confine myself entirely to a minute account of the plan adopted in my laboratory.

Before I proceed, however, I must add, that as I never had any secrets in this process, I have none to tell. I have so frequently received communications asking the question, or

assuming that I had some secret way of using the collodio-albumen process, that I wish it to be distinctly understood that *everything I know about the process is written here.*

In order that the formulæ for baths and solutions may not be mixed up with a description of the manipulation of the process, it will be better to keep them separate, and first speak about the various compounds used in the preparation of collodio-albumen plates, giving each bath, or solution, a number, for reference when describing its use.

No. 1. *Plate-Cleaning Solution.*—To 4 ounces of spirits of wine put about 6 drachms of tripoli powder. When used it must be shaken up, as the powder settles to the bottom of the bottle, leaving the spirit clear above.

No. 2. *Preparatory Coating of Albumen.*—Dilute a small quantity of the iodized albumen (described further on) with 8 or 10 times its bulk in water. This preparation is only required when blisters are feared. It is as well to refrain from using it, if possible; as the danger of specks and dust increases with every additional coating a plate receives. In my own practice it has seldom been used, although there have been times when I have been obliged to do so; for occasionally a whole batch of plates will blister, so as to be of no use, and the dilute albumen must then be employed. It is quite effectual in arresting the defect. More frequently blistering is partial, some plates suffering, while others escape; and, again, weeks and months may elapse without any appearance of blisters at all; and all this with the same collodion. There are certain conditions of the atmosphere, undoubtedly—perhaps some electrical conditions—which are unfavourable to the close adhesion of the film to the plate. A collodion which will resist these influences would render preparatory

coating of albumen needless, and be the greatest possible boon to dry photographers. And this leads to the next head.

No. 3. *Collodion*.—As I have hitherto not made my own collodion, I cannot give a formula for making it. I have, all along, been dependent upon others for its supply. Its behaviour, as to blistering, has been, as described above, sometimes good, sometimes bad, very often indifferent, and *never entirely to be depended upon*. I firmly believe that any collodion that will adhere to the glass with a tenacity sufficient, will answer for this process. I had, some years ago, a sample of the very worst kind, for the wet process, insensitive in the extreme, but possessing the property of sticking to the glass under all circumstances. It was not only in this respect, but in all respects, the finest I ever used for the collodio-albumen process. Its bad qualities as a “wet” collodion were of no consequence for the dry. It could scarcely be removed from the glass, and almost felt, to the finger, like white wax. It *never blistered*. The firm that made it of course found it very bad for general use, and *improved* it till it was worth nothing. If manufacturers of collodion would try, I am sure a satisfactory quality could be made. They have never done so entirely. Here are a few hints to those who like to experiment. The gun-cotton should be made with the strongest possible acid. The iodizer should be equal parts of potassium and cadmium. Most commercial samples contain too much alcohol. The proportion of 3 parts alcohol to 5 ether is about right. No bromides in the iodizer. I am using Keene’s collodion at present.

No. 4. *First Silver Bath*.—This is the usual nitrate bath used in the wet process, about 35 grains to the ounce of

water, slightly acid. The exact amount of acidity does not matter. A considerable quantity of even free nitric acid is not objectionable. A bath much too acid for "wet" answers perfectly well for this process. The bath I am now using was made some years ago, has never been doctored, scarcely noticed, except to filter sometimes and keep up its strength, and has never been out of order. So long, indeed, as it produces the iodide of silver on the plate, it seems to have done all that is required; other conditions are unimportant. Failure in this process can never be traced to this bath. It is as well to know that, whatever faults there may be in the experience of persons trying it, they need not look for the cause in *that* quarter.

No. 5. *Iodized Albumen* is made as follows:—

Whites of	...	...	...	10	eggs
Water	...	...	...	2½	ounces
Iodide of potassium	...	...	...	50	grains
Bromide of potassium	...	...	...	10	grains
Liquid ammonia	...	...	...	2	drachms.

Dissolve the salts in the water, add the ammonia when dissolved, then mix the whole with the albumen, and beat up to a froth. Noton's beater is useful for large quantities, but a bunch of quills, or a plated fork, will easily beat five or six eggs. They cannot be beaten too much. Ten or fifteen minutes will be required to produce the full effect. It must then be allowed to settle, and can be decanted. When used, it must be filtered through a bit of sponge, placed in the neck of a funnel. It is as well to use fresh eggs, if possible. The ammonia is to make it keep. After a month or so it becomes too limpid to use. It ought not to be used more than that age, and when once used must be thrown away.

No. 6. *Aceto-Nitrate Bath.*—The bath is the same as the former one, but much more acid:—

Nitrate silver	...	...	...	30 grains
Water	...	...	...	1 ounce
Glacial acetic acid	...	...	...	$\frac{1}{2}$ drachm.

This bath becomes discoloured by use. After a series of plates have been immersed, it shortly assumes a reddish colour, and should be poured back, after using, into a bottle containing a quantity of kaolin, well shaken, and then allowed to settle. When wanted again, pour off carefully the clear solution without disturbing the sediment. Of course the quantity of bath should be large enough to allow a considerable portion to remain with the kaolin. The acid evaporates a good deal, and requires—especially in hot weather or when used frequently—an additional drop or two to each ounce of solution. The silver does not want strengthening, as the diminution of this salt is very small indeed by use.

No. 7. *Developing Solutions.*—

Pyrogallic acid	...	...	...	2 grains
Citric acid	...	...	...	$\frac{1}{2}$ grain
Water	...	...	...	1 ounce.

Besides this mixture, there should be also a bottle containing a citric acid solution, and another bottle with a nitrate solution. The former, 8 grains of citric acid to 1 ounce of water; the latter, 30 grains nitrate silver to 1 ounce of water. Also a bottle of *dry* pyrogallic acid to mix with water, as required, when developing. This plain pyro, without acid or silver, is always mixed just at the moment it is wanted, in the quantities wanted, and according to no rule except that of the “rule of thumb.” It is used of all strengths, from

2 grains to 20, according to the effect required: strong, when the picture seems under-exposed; moderately weak with correct exposure; or altogether superseded by the acid pyro if the subject be suspected to be much over-exposed.

No. 8. *Fixing Solution.*—

Hyposulphite soda	...	...	6 ounces
Water	...	...	1 pint.

When dissolved, add a few drops of acetic acid. This will turn the solution milky; but it does not require filtering. Some samples of hypo are alkaline. The solution in this state produces blistering of the film, even when no blisters have previously appeared. Sometimes it is so bad that the film is drawn in wrinkles all over the plate. When the bath is slightly acid this never occurs. It requires strengthening when weak by use.

Water.—Distilled water is not necessary in any stage of this process. Water supplied by water companies to towns and cities, clean rain-water, or spring water may be used. The Manchester water supply has served for every purpose, in my laboratory, for years. The silver baths have been made with it. No distilled water has, at any time, been used. I have developed a few plates in country places, sometimes, and with all sorts of water—some specimens containing much lime, magnesia, iron, and other impurities—but with no injurious effect upon the negatives.

I have thus given the formulæ for the several baths and solutions used in the collodio-albumen process; but wish to remark, generally, that the proportions given of each are not of such great importance that deviation will produce failure. There is much latitude in these things. We all know that

silver baths, for instance, are constantly changing with every plate immersed in them. So the hypo may be 6 ounces to the pint of water when first made, but very soon it may not be one. The result—removal of the iodide—is the same ; in the first case quickly, in the second slower. The process is singularly free from defects produced by silver baths, &c. Failure generally arises from blistering of the film, from keeping the sensitive plates too long, or from mismanagement in developing : this latter above all.

I will now describe the preparation of a plate. It has to go through the following :—

Cleaning.
Collodionizing.
Sensitizing.
Washing.
Iodide bath.
Albumenizing.
Drying.
Sensitizing.
Washing.

Plate-cleaning ought not to be done in the operating-room, as it is a dusty operation. New glass needs no further cleaning than a good rub with a clean cloth, and a polish with chamois leather. Glass once used, however—after the old film has been removed by steeping in washing soda—should be well washed and drained, and then the cleaning solution (No. 1), tripoli, and spirits of wine, applied by means of a tuft of cotton-wool, on both sides of the plate. This, when dry, should be rubbed off again with another tuft of wool, and when the dust has been cleaned off, polished with

leather. Take the plates, so cleaned, into the dark room, pile them one against another, on a piece of clean paper, on a shelf, near the silver bath, where they will be in a convenient position, to be taken up separately by the plate-holder, for collodionizing.

Some time before commencing preparing plates, the dark room should be swept, the floor damped, the shelves and tables well dusted, a nice clear fire burning in the grate, and everything, generally, should have a neat, clean, and tidy appearance. These preparations will not only prevent dust from injuring the plates, but will have a certain influence upon the operator and his work. Have plenty of light, too, in the room, for in all these first stages of the process a large amount of yellow light will do no harm. The light in the room ought to be so arranged as to enable the photographer to have at his command much or little, as he wishes. This object is gained very well by having the window covered with yellow paper, just one thickness, pasted on the glass squares, and a yellow calico blind to draw down inside. During the preparation I am describing, the blind may be drawn up, leaving the yellow-papered window to give its light. It is only when the plate is finally made sensitive that the room should be darkened by the lowering of the extra blind.

Although, in the list of operations, I have not named the preparatory coating, it will be as well to describe it in this place, as the photographer may sometimes be inclined to take the trouble, in order to secure perfect immunity from blisters.

Take the weak albumen solution (No. 2), and, holding the plate on a holder, pour a little along one edge, and, as it does

not *flow* like collodion, spread it over the surface with a clean glass rod. Now let it drain from one corner, and dry. There is nothing better for draining a plate, of the size I am now supposing—say 10 by 8 inches—than a common glass tumbler. The lower corner rests in the vessel and drains, whilst the upper one is leaned against the wall. Finish coating the batch of plates with the albumen before proceeding to the next step. Now collodionize the plate. Let the collodion set well before placing it in the silver bath. When it is ready, immerse in the bath (No. 4) the usual length of time for ordinary wet plates. When it is removed from the bath, drain into a tumbler for a minute or two, just to save the silver, which would be wasted in the subsequent washing. Now put the plate into a dish of water, and move it about. In the operating-room there should be a good-sized, shallow, leaden trough, with waste pipe. This trough should be large enough to hold two large varnished wooden dishes, about three inches deep; over each dish, a tap, with a short india-rubber tube, to conduct the water within a short distance of the dishes. During plate-preparing, the water should be continually running in and out of these vessels. After washing well in the first dish, remove the plate into the second. The water in the first will be very milky, in the second nearly clear. On taking it out of the latter, give it a final rinse from the water-tube. It is quite unimportant how much the plate is washed. The free silver must be entirely removed. In order to do this completely, I have sometimes, on taking the plate from the second dish, immersed it in a shallow vessel, containing a bath made of—

Water	...	...	...	...	1 ounce
Iodide potassium	...	...	...	...	3 grains.

It is not much additional trouble, as it can be put in and taken out almost immediately. Just drain now till the water ceases to drop, and proceed to albumenize.

From the stock-bottle of iodized albumen (No. 5) filter as much as is required for present use, by passing it, through a bit of sponge in the neck of a funnel, into a glass measure or other vessel. In a second measure keep another small funnel, with a piece of clean muslin inside. Take the plate on a holder (*not* the one you use for collodionizing), and pour, on the still wet surface, the albumen. Let it flow smoothly and slowly, so as to mix intimately with the water. Then pour it off again, *not* into the measure you have in your hand, but into the one with the funnel and muslin, through which it filters again into the measure. If the albumen were poured off the plate into the measure direct, it would be full of air-bubbles, and could not be used again. The muslin filters the bubbles out, leaving the solution free. Repeat the covering of the plate with albumen (it requires doing twice); then drain in another tumbler—film to the wall. As this tumbler will be wanted for the next, when the albumen has ceased to drop, the plate can be removed to a shelf, the lower corner resting on a little clean blotting-paper.

I have mentioned only one plate; but of course there will be a succession of them, each one a stage behind the others. When the first has arrived at the shelf to dry, there will, probably, be one ready for the albumen; another in the washing dish; a third draining; and perhaps a fourth in the sensitizing bath. It increases the rapidity of production very much when two persons are engaged in preparation—one collodionizing, sensitizing, and washing; and the other taking up the plate at that point, and albumenizing, draining, and

drying. After becoming partly dry, finish with heat at the fire. When the last plate in the batch has been albumenized, the windows may be thrown open, and the white light admitted, for the plates are now not sensitive. They should be stored away in clean groove-boxes, where they can remain till wanted. In this state they will *keep* any length of time: there is no doubt about this: I am able to speak positively on this point. The plates, in this stage of the process, seem to undergo no change; certainly, they do not deteriorate. Sometimes I have fancied they were better old, but could not affirm that to be really the case. If plates keep so well, then some persons might propose to themselves the plan of preparing as many during the winter months as would 'serve them for the summer. I do not recommend this, however. Winter is not favourable to photography. The atmosphere, especially in large towns, is then more impure than in summer; the solutions, and water, and baths, are all low in temperature, and the plates are far inferior in every way. It is better to prepare in spring and summer.

Before making a plate sensitive for use, the operating-room should be darkened by drawing down the yellow blinds. Then take the plate and air it at the fire, to drive off any moisture the film may have absorbed from the atmosphere. Dip it, at one sweep, without stoppage, into the silver bath (No. 6), where it may remain one minute, or five, or ten: mine usually remain in the bath not more than one minute. After draining a minute or two, wash in the two dishes of running water, and then profusely by the water-tubes over the dishes. It is impossible to wash too much. Experimental plates have been tried, and although gallons of water were poured over the surface, the sensitiveness remained equal to that of plates

treated more moderately. Drain in tumbler, and dry on blotting-paper. Artificial heat must not be employed unless the plates are to be used very soon. Heat would cause them to decompose in a few days. They will dry of themselves in about ten minutes. While the plates are drying, look on the surface for blisters. This is the time to ascertain whether they have this fault or not. If they get quite dry before they are examined, you will not be certain of their condition, for, when dry, the blisters go down, and become invisible. If they are free in this state, they will continue to be exempt all through developing.

The plate is now ready for the camera. It will be, perhaps, as well in this place to say something about the *keeping qualities of collodio-albumen plates*. The length of time they will remain good depends upon the weather. When cool, they will keep a month; but in sultry seasons, when milk turns sour, and meat goes bad, they deteriorate soon, and for the same reasons. Then a week, or ten days at most, is as much as they should be trusted. I do not wish to conceal this unpleasant fact, but to give it prominence, for there is sadly too much *flattering* of processes, generally, by their advocates, amongst photographers—a desire to say the *best* they can about rapidity and other qualities—which bring men who experiment in these things disappointment and failure. So I say, then, that the newer plates are the better, although but little perceptible difference is observed for the first week. In hot weather, to ensure good negatives, it is better that the development should not be delayed longer than ten days after preparation. I may here remark that the image, after exposure, does not gradually disappear, as in some dry processes. Supposing one plate to have been exposed fourteen days

before development, and another only one day, the first would develop quite as well as the last. The first plates exposed on a tour would be as good as those used just before returning home, as regards the latent image and its development.

And now, having described so far the progress of collodio-albumen plates, it may not be out of place to give a few hints how they may be conveniently carried to and treated on the field. And here I shall be giving only my own ways of doing these things, without asserting that they are the only or the best ways.

My photographic outfit for a fortnight's trip consists of a leather camera-case (enclosing camera and three double slides, with lens, &c.), a camera-stand, and a plate-box containing the precious plates. This latter is, in reality, *two* boxes, an inner and an outer one. The inner is a grooved plate-box—of deal—varnished inside and out, with a layer of cotton wool in the lid, to keep the plates from rattling; the outer box is just a size larger, and is provided with a lock and key, also a handle to carry it by. During all my wanderings this case is never entrusted to any hands than my own. I know the risks it would run if I did not take complete charge of it myself. The porter, at the railway station, would politely offer to put it with "the other luggage," and, on the very apex of a tottering pyramid, would, "by your leave," attempt the perilous passage to the train. Boots, at the hotel, would try to carry it upstairs under his arm, while bearing at the same time a heavy portmanteau in each hand, coats, rugs, and capes over his shoulders, and a carpet-bag between his teeth. The coachman would put it in the boot, or ask somebody to "chuck" it on the top. But no! They may do what they like with the rest, but this little black box is my peculiar

care. On a journey, should the weather be warm, it is necessary to keep it in all the coolest places at the hotels, and to take care that it is not left in a bedroom, or other place, in such a position that the sunshine will fall upon it during the day. The lock in the box should be of a good quality, so that it would resist the possible curiosity of chamber-maids, who, otherwise, might have a key to open it. One fraction of a moment's exposure to white light would, of course, make all the trouble of a journey in vain. Sometimes, to ensure freedom from anxiety on this head, I have sealed the inner box with an adhesive label, or have pasted a postage stamp across the opening of the lid; so that, had anyone opened the box in my absence, the broken stamp or label would have betrayed the mischief.

Plates that have been exposed during the day can be changed from the dark slides to the plate-box, each night, at the hotel. To distinguish them from those which have not been exposed, it is a simple, yet efficient plan, to affix a small gum ticket at the back, when returned to the box. This changing of plates requires great care, in order to avoid mistakes and confusion. It should be done when quite alone, and, by all means, *before the night-cap* has been taken in the bar. Slightly muddled, and half asleep, I have known my companions in the field sometimes change their plates just before tumbling into bed, with an awful consciousness that everything they had done was wrong; never to lose that feeling all the rest of the journey. On each little adhesive label a number may be written, corresponding with a list of the subjects taken, in a pocket-book, so that, on returning home, any particular subject can be recognized by its number, and developed first, if desired.

And now a word about exposure. For plates 11 inches by 9 inches, with a single lens (Lerebours) $14\frac{1}{2}$ inches focus, and $\frac{1}{2}$ -inch stop (the subjects, lake and mountain scenes), I should give from ten to twelve minutes' exposure; for plates 7 inches by 5 inches, Dallmeyer's triplet, stop marked with a \times (similar subjects), from three to five minutes. Having taken the views and returned home, there comes the most interesting, and, at the same time, the most important, operation to go through—development. Before beginning, however, make all clean and tidy again in the dark room; wash out some measures for developing; see that the solutions (No. 7) are ready for use; as hot water may be required, have it at hand (the best way of procuring it is to have a clean glass flask, which, when filled with water, is supported over and heated by a Bunsen's burner, or gas jet); also provide a little clean cotton wool—it can be got at the druggist's. When the blinds are drawn down, open the box, take a plate out, and place it upon a developing-stand. The most convenient kind has a circular top. This form of stand allows the solution to be poured easily off any corner of the plate. The triangular form is most objectionable. It is not necessary for the stand to be perfectly level, as the solution never rests long upon the plate. Now let the water run over the surface, and tilt the plate, that it may run off again. Before commencing, refer to your notes, made during the tour, to see what the subject is you are about to develop, what exposure it had, and so on. This will guide you as to the treatment the plate should receive. If the right exposure is supposed to have been given, proceed in this way:—

Take a small quantity of *dry* pyro from the bottle—say about two grains; put it into a clean measure, and then add

about an ounce of water. The pyrogallic acid will dissolve immediately ; it needs no filtering, but can be poured at once on the plate. Pour off and on repeatedly. In a few minutes the sky will appear, and, later, several high lights of the picture. Go on, however, until the foreground becomes just visible. Look *on* the picture at this stage, and not *through* it. The details are seen by reflected light, but they are too faint to be viewed by transmitted. Take care not to go too far in bringing out every detail, as the subsequent blacking up will bring out more, and fog the picture, just as *over*-exposure does. On the other hand, do not stop using the plain pyro too *soon*, or the after operations will still leave details undeveloped, making a black and white picture, just like the effect produced by *under*-exposure. This is, indeed, the most important moment. On your decision now depends the quality of the resulting negative. At this point of the development, therefore, it is necessary for a few seconds to throw a strong light upon the plate, that the exact state of the developed image may be known. To do this, either draw aside the yellow blind, or, if it is night, take the plate close up to a candle, or near a gaslight, and survey it carefully. As a guide to judge of its condition for blackening up, it may be said that *all* the details must not be visible ; there must be a considerable amount, amongst the brown image, of clear yellow iodide film, to all appearance unaltered. It will require much practice to judge this rightly. Arrived at this point, however, when the plain pyro has produced the development necessary, take an ounce of the acid pyro from the bottle, and two or three drops of the silver solution. Pour on the plate, and now begin to watch the picture by looking *through* it, as the warm brown image produced by the plain pyro will give

place gradually to more deep and intensified details. The developing solution will turn red, but if clear, go on with it; if muddy, make fresh solutions with *more* acid. At this stage examine the plate, to see if there be any deposit of dirt on the surface. If so, run water over, and clean the surface with a tuft of cotton wool, the plate being covered with water at the time. This cleaning may be required several times before the picture is finished. After washing, go on with the development, perhaps this time using double the quantity of silver, and more acid. Pour on and off continually, never allowing the solution to rest long on the surface. The picture will go on deepening. If it should be tedious, intensifying slowly, add some dry pyro to the two-grain solution in the measure, with a little more silver and acid, and this will give more vigour to the negative. As the blackening approaches the proper point, it is well to stop, wash the plate, and study it leisurely. It is not easy to determine when the right depth is attained—a depth that will give at once a print brilliant, yet soft, and full of detail. Do not judge by the sky; as a rule, the sky in a well-developed picture will not be black when finished, and will require blacking out by hand. Sometimes there are subjects which will admit of a further blackening of the sky, after the rest of the plate is done, by developing that part alone.

Such is the treatment a well-exposed plate requires. Let us now develop one which is *very much under-exposed*. It may be the operator is not aware that such is the case, but finding the ordinary method, above described, does not bring out the image, he suspects the exposure, and commences to use means of *forcing* the development. In cases, then, where the plain pyro does not act soon, take warm water, instead of cold, for

the solution. If this does not have the effect desired, try still warmer solution, and also more pyro (say double the quantity). In cases of a bad kind, use the water at boiling point, and the pyro solution twenty grains to the ounce water. It is only in extreme cases, however, that such forcing is necessary, and the plate must not be an old one, or decomposition will be set up rapidly in the film, and the whole surface turn red and foggy: only a very new plate—say a day or two old—in warm weather will stand such violent treatment. When the image has thus been forced out, blacken up, as before, with acid pyro and silver very slowly. It may be mentioned here, that when once the *acid* pyro has been applied to a plate, a return to the *plain* pyro is useless; it has no longer the power of producing any more detail.

The behaviour of an *over-exposed* picture is this:—On applying the plain pyro, the sky will appear, very soon followed—almost immediately—by other portions of the subject. At once pass water over, and proceed with acid pyro and silver; or, if the plate be *known* to have had too much exposure, before beginning, it is best *not* to use the plain pyro at all, but to commence with acid pyro and silver, without waiting for details, so that the image may develop and deepen simultaneously. Use plenty of restraining acid in the solution.

There is a very convenient way of developing a lot of pictures, especially should they be small ones—say 7 by 5. Fill a clean glass dish, about a quarter of an inch deep, with plain pyro solution, 2 grains to the ounce of water, and, after wetting the plates, put several of them into the mixture, face upwards. Gently move the dish at intervals. When one of them is developed to the point requiring blackening, take it out, and finish it on the stand with silver and acid pyro, at

the same time putting another into its place in the dish. Thus you will have a succession of them, coming round in preparation, as they are finished with silver. They may remain for hours, or even days, in the solution, changed now and then; but in obstinate cases of under-exposure of this sort, hot water is the best treatment. Should more than one be ready for deepening at the same time, they can be put into water to wait their turn. Add to the water a drop or two of the citric acid solution.

When plates are old, and decomposition has commenced, the dish development is a very good plan. A plate that has been kept too long turns red during the development, and, as it is blackened up, becomes darker and redder to the end, rendering it quite useless. Hot water would give them no chance in this state.

When development is finished, fix in hypo solution (No. 8), either in a flat dish or in a perpendicular bath. After the iodide has disappeared, wash well under a tap. There is no danger, in all these washings, of any injury to the film. It is firm, hard, and horny. Before drying, it is well to give it a final cleaning with wool.

Now, supposing the negative is veiled, fogged over the whole surface, through over-developing, or over-exposure, or both, and it must necessarily print slowly, it may be improved in this way:—Take an alcoholic solution of iodine. Pour a little into a measure. It is dark red, or almost black, in colour. Add water to it, till it assumes a dark sherry colour. Pour on the plate (after wetting with water) on and off. Gradually the solution will lose its deep colour, and become pale. It is losing the iodine, which has gone to the silver on the plate, and has combined with it to form iodide of silver. Wash

slightly, then fix again in hypo. The fog will be thinned, and the negative be clearer. Repeat the process, if one application should not be enough; and, if necessary, increase the strength of the iodine solution. By the same means some one portion of a picture may be reduced, leaving the rest unaltered. Say it is a white, glaring stone, in a river scene. The silver will have deposited heavily on this stone, and it prints very snowy. Take a camel-hair brush, dip it into a strong solution of the iodine, and paint the stone over with it, letting the liquid remain on some minutes, and supplying it, at intervals, with more solution. In this case the plate must be surface-dry; if it were wet, the iodine would run beyond the bounds of the spot you wish alone to cover. Hypo must follow, laid on with a brush in the same manner. This experiment should be conducted very carefully, and only tried in extreme cases, as it is a risky thing to do. Negatives ought to do, as a rule, without any "dodges" of this kind. Having done it once or twice myself, I thought it best to mention it, with the caution added.

Collodio-albumen plates can be printed from, without varnishing, if only a few copies are wanted; and, indeed, if the negatives are rather thin—if they are a little short of density—they print better in this way. On the other hand, when over-developed and somewhat hard, a coat of varnish does them good, by rendering them more transparent in the high lights.

In blacking out the skies of negatives, very nice effects of clouds can be produced by using lamp-black (water colour) and a camel-hair brush. Use the colour quite opaque and solid for the upper portion of the sky and till near the horizon, when it must be applied thinner, and broken into

lines and forms, so that the semi-opaque film will print through very slightly, and give suggestions of clouds. Stratified clouds should only be attempted, as it is almost impossible to draw in cumuli and other forms of cloud. All this is done at the back of the plate, and the hardness and difficulty of going round complicated objects is avoided. On taking the print from the printing-frame, the whiteness at the top of the paper (produced by the opaque black) can be toned down and melted into the cloud effects below, by light, before toning.

When the first print is produced from a negative, try what shape suits the lines of the picture best, by placing over it oval or circular shapes of different sizes, cut out of cardboards. Sometimes the corners of pictures are of no value; the oval shape cuts them off. In some, there are awkward lines running parallel to the base of the photograph; the oval will improve them, by removing one of the lines, and giving more variety of form. Many photographs are very much improved by removing some of the foreground, and so on.

I have now described the process as I use it at present. It will be seen that it is not a very convenient one for the photographer who wishes to take things easily. There is plenty of work in it. On account of its limited keeping qualities, too, it is not suitable for journeys of several weeks' duration, unless the sensitizing and development be done *en route*. This is not difficult to accomplish, although it may not be done surrounded by all the conveniences of the laboratory at home. On a trip of this kind, plates may be taken ready sensitized for the first fortnight (in coolish weather), developed on the journey, and fresh ones made sensitized for the rest of the tour.

The albumenized plates in plate-box, a bath of aceto-nitrate (*not* with kaolin), chemicals for developing, dry cotton wool, measures, &c., are required to be taken. The aceto-nitrate bath would turn rather red, but, as the plates would never be kept long, it would be of no consequence. A quire or so of yellow paper and a packet of pins would also be wanted.

Provided with these things, on arriving at some central hotel, in the district you wish to photograph, apply to the proprietor of the house, or the waiter, for the use of some small room or outhouse for a few days, explaining what it is wanted for. A room with one window, and that a small one, is best, as it is readily covered up with the sheets of yellow paper, which can be pinned up in a few minutes. Make friends with boots or waiter *in the usual way*, and he will find you a table to work at, a large mug of clean water, another vessel for dirty water, with a small jug to pour on in washing plates, a wine glass or tumbler for developing-stand, and anything else you may want during your stay. Here, in this temporary laboratory, you can sensitize plates or develop them, and find plenty of pleasant work for wet days. The plates developed need not be fixed.

This plan is far better than attempting to develop in the bedrooms of hotels, where table-covers, towels, and other property of the landlord are seriously damaged by the solutions. This practice is to be condemned. I was once ashamed and annoyed on being refused admittance to a first-class hotel until I had explained that, although my apparatus revealed my pursuit, there would be no manipulating on the premises.

And now, having exhausted all I have got to say about the collodio-albumen process, I will finish by wishing every

success to those who may be inclined to try it. Many have tried it, I know, and have failed, and I think the failures have chiefly been caused (as I have said before) by one or all of the following reasons:—By keeping the plates too long after sensitizing; by washing them too little in the various preparations; and by mismanagement in developing. Attention to these three points will, I am convinced, ensure success.



CONFESSEONS—BY THE DISCOVERER OF THE GIN-AND-WATER PROCESS.

I AM not, naturally, an ambitious or aspiring character; but rather retiring, shy, and nervous in temperament; depending much upon the opinions of others, rather than on my own, and having but little confidence in myself. Yet, once, I was ambitious. It was during the excitement of the early dry-process days that I was seized with this desire to distinguish myself; and I became the discoverer of the great Gin-and-Water Process, a brief account of which appeared some years since. I will describe the origin and history of this process—how I desired to do it, how I did it, and how I wished I hadn't done it.

I am an amateur photographer, and have practised the art from its earliest days. I often look back, from the bustle and hurry of these times, to the tranquillity of the old days, when the art was young, and when its study was confined to a few simple amateurs, scattered here and there, patiently and devotedly occupied in the production of the new and ever beautiful sun-pictures. There were but two or three processes in those days; and rapid and feverish changes were quite unknown. A simplicity and contentment—an even, smooth flow of events—a drowsy repose—rested upon the Art, well suited to the gentle character of its followers. The processes were slow; and slow and deliberate the workers. To Calotype or Daguerreotype your friend, you beguiled him

into the recesses of your garden—placed him comfortably in an easy chair, with his face whitewashed for greater rapidity of action—made the usual camera arrangements—and then gave him twenty minutes of good honest sunshine, whilst you took a turn in the shrubbery with a cigar. Arcadian repose, this! a very photographic Paradise! These were the days when men loved good solid apparatus, and had no idea of light or fancy constructions; when lenses were ponderous engines of brass, with brazen-handled caps, like warriors' shields; when cameras were built, not for a day, but “for all time;” square, unyielding brass-bound chests of wood selected for its weight, mounted on stands whose double-jointed-legs, iron-spiked, would bear an avalanche! These were, indeed, formidable weapons in appearance, but were wielded by a patient and simple race, who lived at a period of quiet and repose unknown to modern photographers. No rude innovations then disturbed the minds of men; no lenses of new forms and angles; no processes, at rapid intervals, to distract and confuse; no puffs of photographic quacks; no squabbles of rivals to photographic fame; no Journals to publish them!

Those early days! How tenderly I regard the poor, feeble, faded results that yet remain to me from the old, old times! How much I value them above the more finished productions I have since achieved! This was, indeed, the golden age of our art. The profound tranquillity that reigned among the happy photographers of that period, can only be compared to the halcyon days of the renowned Wouter Van Twiller, before the pestilent Yankees disturbed the deep repose of the sleepy Dutch settlement of New Amsterdam—a tranquillity which, alas! like that of the peaceful colony, was now about to be broken for ever!

For now collodion appeared ; and the slow and quiet advance of photography was quickened into a lively measure. Progress was rapid, change incessant, discoveries numerous. With the dry processes came a rush of inventions. For some time the minds of men were almost exclusively directed to preservative substances. I say the *minds* of men ; but, as the substances were generally something to eat, it is more than probable that the inspiration frequently proceeded from the *stomach*. Discoverers in this direction were many and honoured. Happy was the man who invented a new jam, or introduced, for the first time, an indisputable novelty in jellies ! Devoted, and almost heroic, was he deemed, who fearlessly investigated treacle, and waded through its depths to fame ; or, nothing daunted by the tears it cost him, peeled the unctuous onion, for whose juices he was thus contented to suffer and to weep ! And not less honoured he who, from the fragrant gums and spices of "Araby the Blest," or the more homely fruit of raspberry and currant, extracted their grateful syrups and sweet essences ; or, simpler, homelier still, showed, when in solution held, how sweetly worked the childish lollipop !

Discoveries like these were hailed with interest. Their authors received the applause of men, and gained the envied position of distinguished discoverers. The pages of the leading newspapers and journals received and published their contributions, and helped to spread their fame around. It was at this time that ambition stirred within me. I dared to aspire. I, too, would win a name. So the quiet of my tranquil life was broken ; I became a changed man, and accepted the cares and anxieties inseparable from an ambitious aim. I looked around for some way of distinguishing

myself; became moody, thoughtful; wore an unsettled look; neglected my dress; didn't have my hair cut with that regularity which had been the admiration of my barber, and an example to his customers; came into collision with people at street corners; nearly got run over; and, in various ways, showed a pre-occupied and absent state of mind. The grocers' and confectioners' shops were centres of great interest to me, and often I looked anxiously through the wares displayed in the windows, if, haply, I might find some compound or confection which had escaped the vigilance of previous discoverers. At home, I arranged all my bottles of chemicals in a row, and, placing a chair in front, sat looking at them, by the hour, in the remote hope that they might, in my imagination, fall into some hitherto undiscovered combination. But nothing came of it.

Want of success in time made me low-spirited. This despondency, I believe, affected my internal economy; for something went wrong in my inside. I do not know what it was, but my friends seemed to know exactly, and volunteered advice in abundance. Each had his never-failing specific for my case. I was obliging enough to try all the remedies, but as many were very nauseous, and none did me good, I naturally preferred that which was least disagreeable to take. Now one of my kind advisers had strongly recommended good living, and the only physic an occasional drop of what he characterized, in a general way, as "something warm." On my desiring him to speak more explicitly—in fact, to "give it a name"—he mentioned, in an under-tone, that very fluid from which I ultimately composed my preservative syrup. And, indeed, it was while dejectedly mixing the usual materials, and thoughtfully stirring with a spoon, that the

process dawned upon me. I well remember that eventful evening, sitting by my fireside (I am a bachelor), one moment depressed with care, the next relieved of all oppression, and elated with the brilliancy and completeness of my discovery. There—in that common vessel, a tumbler—were all the ingredients of a superb syrup,—alcohol, saccharine matter, citric acid, with flavour of juniper berries!

I had scarcely realized the greatness of the event, when an acquaintance, and photographer, happened to call upon me. I received him joyfully, and hastened to tell him the news. He listened to my views with a coldness in marked contrast to my own excited and eager explanations. As I valued his opinion much, I felt disappointed; but gradually he seemed to see the importance of the discovery, and I was again encouraged. A thought at last struck him.

“I’ll tell you what,” he said; “as we cannot very well try it now on a plate, I’ll just take a little on my palate; I fancy I can judge of its qualities as a syrup by the taste.”

I mixed for him instantly. He took a small sip, looking over the rim of the glass, abstractedly, into the distant corner of the room, concentrating his whole attention into the sense of taste; and then he shook his head, thought it would not do, but would try a “longer pull.” On setting down the glass empty, he still shook his head dubiously, and said he feared the saccharine matter was too small in quantity.

“Easily altered,” I replied, mixing again with more sugar; “try that.”

He took it kindly in his hand, and this time pronounced it better; but in my haste I had forgotten the lemon. He detected this at once. “It will never do without acid,” he said; “the plates would fog, you know.” So we tried again,

and got *that* right. But a still greater difficulty remained—to get the right proportion of water. I thought we never should manage it, for it took some hours, during which my friend showed the utmost patience, self-denial, and good humour; allowing himself to be experimented upon, as it were, in the kindest manner. I kept apologizing, but he said he “didn’t mind it in the least;” indeed, the more I troubled him the more genial and good-natured he became. He seemed quite to enjoy it. We should have arrived at our best results sooner—as regards the quantity of water—had I listened to my friend’s suggestion that the smallest proportion of that fluid was the best, an opinion he had expressed from the first.

Now how changed was his opinion of my discovery! He was quite boisterous in his congratulations; indeed, I never saw my friend so excited on any photographic subject. The good fellow spoke in the most feeling and affectionate manner, one moment moved almost to tears, the next, slapping me heartily on the back, or digging me playfully in the ribs, as he declared me to be the most amiable and fortunate of discoverers. If he could be of any use to me, he went on, he would come again any time, and not only come himself, but would bring other photographers with him, to my help. And he kept his word; for during the next few weeks, while I pursued my experiments of an evening, my little laboratory was frequented by many of my brethren in the art. Thus was I already recognized as an inventor, and reaping, even now, the sweet rewards of fame.

Those evenings were very pleasant; but my investigations were somewhat retarded by that very fact, for my friends would insist, in their playfulness, on drinking my health frequently in some of the solution I had mixed for experiments;

and of course I had to arrest my labours in order to express my thanks neatly, besides having to mix fresh solution.

I was too much indebted to my friends, however, for many useful hints, to regret their companionship. They were ever ready to give me advice and assistance, and I made use of them in many little ways. One had a fancy that the solution ought always to be warmed, and offered to hold the bottle to the fire to air. Well, I tried that, but found the most remarkable evaporation took place, so that there was but little left when he brought it back. My friend explained it on scientific grounds, which, as I am no chemist, I but imperfectly understood. Another entirely dissented from his brother photographer, and urged the necessity of keeping the solution at a low temperature. For this purpose it was removed and mixed by himself in a small room where there was no fire, and left in his charge. He was in and out of this room constantly, with a little thermometer and the ingredients, sparing no pains to secure the right temperature and strength. Both he and my other companions displayed the greatest cheerfulness as the evenings advanced, frequently becoming musical, and getting me to join them in "O Willie brewed," a glee in which I was expected to warble the upper notes. Sometimes they would parody the words, and sing in full chorus—

"O Jamie brewed a pint of gin,
And Joe and others came to drink,"

and so were very merry. On parting with them at my door for the night, I have often listened to the cheerful strains of their voices as they passed along the quiet street, the burden of their song being a strongly expressed resolution not to appear upon the domestic hearth till the early dawn of day.

And now it was time to make my process known. My fame would thus be spread beyond the narrow circle of my friends. So I sent an account of it to the journals of the period. It appeared, and I felt, as I contemplated my name at the end of the paper, a glow of pride, which gratified my ambitious desires. Little did I think of the consequences. Not many days elapsed before I began to receive communications from all sorts of people, who were desirous of trying the process, but wished first to make "a few enquiries." I courteously, and at some length, replied to these letters, feeling somewhat flattered by the early notice my invention had gained. But soon the number of these epistles increased so much as to make it a serious business to reply, so my answers were as brief as possible.

Day after day the number of my correspondents increased. The postman whose unfortunate duty it was to deliver letters in my district suffered heavily, and often staggered to my door under the heavy burden of documents addressed to me. In compassion I have sometimes cheered him with a refreshing glass of that very beverage which had caused him all this toil—gin-and-water! the source and solace of his troubles, at once the poison and the antidote, and "a hair of the dog that bit him." I told him the grim joke one day; he appreciated both the joke and the liquor—particularly the liquor, I thought.

The number of letters increased more and more. What a terrible visitation of paper! It was too bad to ask me so many questions. One writer wanted replies to thirty-nine in a letter. I remember the number, because, I thought at the time, it was just the figure of the Articles of the Protestant Faith. The confused state of my head, and the muddle I was

fast getting into, may be inferred from the fact that, unconsciously pursuing the idea of the Church of England's Articles, I began my first reply to my correspondent with, "I believe in Gin-and-Water," before I discovered my mistake.

Another document, which I think must have come from some photographic lawyer, was of a formal and imposing character, and consisted of several sheets of foolscap, fastened together at the corner with red tape. There were a number of questions, on my process, arranged in a business-like manner, with spaces on margin for replies. This serious and formidable document reminded me of the usual Life Insurance form, in which, after stating your age next birthday, the respective ages of your estimable parents, and the state of your general health, you are further required to say what complaints, if any, you have suffered, or are liable to. The questions my photographic correspondent put to me were very similar. He wished to know if I "ever had the measles." Was I "troubled with spots?" "How about blisters?" Did I find my "*spirits* always good?" As I replied to these and many similar questions, I did so with a certain feeling of being upon oath, and that, should I withhold or exceed the truth, I should be guilty of perjury, and liable to a penalty of "£20 and treble duty," a threat I had seen somewhere, on some terrible document of another kind. I was getting nervous.

But my toils and griefs were immensely increased when people had tried, failed, and now sent me the sad spectacles of their many failures. Accompanying these horrors was always a threatening demand to "know the reason why." I was blamed—accused—as the author of their disappointments. The tone of these correspondents was something of this sort:—"I say, look here! What's amiss with this? Aren't you

ashamed of it? I followed your instructions, you know, to the letter. Come! you can't deny that—your printed and published formulæ; and yet—look at it! Why, it's horrid! Call this a process? What do you mean by deceiving the public—eh? eh?" And I felt myself, as it were, shaken by the coat collar. What mean opinions they must have had of me, too, some of them, who, suspecting me of withholding some important point of the process, finished by offering to purchase the secret I was supposed to have kept back, and remit in postage stamps! I bore all this with meekness, for I was humbled; but it was depressing, and I began to feel a vague sense of having done something very wicked coming over me.

Still my work augmented; for the editors of the journals, evidently besieged by enquiries for my address, had *kindly* published it in reply to "numerous correspondents." An amateur, hailing from the high latitudes of North Britain, sent me a box of negatives, taken by the gin-and-water process. They were broken to pieces when they reached my hands, and I was secretly glad they were, as it saved me the trouble and difficulty of accounting for the varied and numerous defects they possessed. It appears the fragments represented four-and-twenty negatives, all numbered to correspond with a list enclosed—a list containing an account of the most direful and complicated disorders that plates had ever suffered from. They must have been a terrible lot! I looked down that fearful catalogue, and found that one had suffered from spots; another from streaks; a third was free from these defects, because there was nothing at all on the plate; Nos. 5 and 6 contained the united faults of one, two, and three, with a kind of universal muddle in addition;

No. 7 had none of the above, but every other fault possible. Several numbers followed, which may be described, generally, as "the same, only more so."

The writer had kindly left some half dozen for me to develop, and wished to know the results. I looked upon their *remains*, and felt glad their troubles were over.

Then the pre-discoverers and the contemporary discoverers ; those who had known my process *before* I did, and those who had invented it *just* at the same time. All these hitherto mute inventors now clamoured prodigiously. In only one case could I find that the discoverer had named his invention to any one, and he had, it appeared, casually mentioned it to *his grandmother!* I had hot work with these gentry, and got into disputations with them, foolishly. I commenced a lengthy correspondence, with one individual, in the pages of a journal. At a very early stage of the controversy my opponent became personal and abusive, reasoning wildly. "Why sir," he wrote, "how could any one find out this process if I could not? From my earliest days I have been mixed up with gin; I have seen more of that fluid, possessed more, and, I dare say, drunk more than you could possibly hope to do. I have *breathed* gin from my youth; from infancy, sir, have I been surrounded—saturated—with it. Gin is in our family; my father distilled it before me, and I distil it now. Well, with these privileges, how could I, as a dabbler in photography, fail to see its application to the Art? And what can *you*, whose knowledge of that liquid is limited to that of ordinary mortals, know about it in comparison with the intimate acquaintance I possess?" In my reply, I wished him to adhere to facts. He subsequently stated a few, in this peculiar way :—

"It's a fact, that I first discovered the Gin-and-Water

Process, and that you didn't. It's a fact, that I am right and you are wrong. It's a well-known fact, that you never *are* right, and equally so that your statements are never free from falsehood. It's a fact, that many people, sir, would pronounce you an imposter, and a humbug, sir ; but, in consideration of the general imbecility you have displayed during this controversy, I won't."

To all which I answered warmly. And thus we belaboured each other, and made a sad spectacle of ourselves before the photographic world, very humiliating, I fear, and of little good to anyone. Doubtless we fancied the eyes of men were upon us, watching, with intense interest, the progress of the fray ; but I see now that not one in twenty knew what we were squabbling about, and fewer still cared ; and that the only emotion excited in the minds of photographers was a sentiment of pity and compassion that we should be so violently agitating our caps and bells, and flouting each other in this unseemly manner with stick and wind-bag, occupying space in periodicals which might easily have been better filled. And so this passed away, and was soon forgotten.

I had a severe lecture from an ardent teetotaller, on the immorality of my process. From the style of the letter, the writer was evidently a member of the Society of Friends. He foreshadowed the mischief my new discovery would bring upon mankind, in various ways. Before I got half-way through his communication I was convinced that he must be mildly insane ; and I found, subsequently, that his epistle was dated from one of those retreats where such persons are taken care of. His letter went on in this way :—

" Surely, thou see'st the appalling consequences of thy discovery ? Why, the sun himself, whose only dissipation has

hitherto been the sparkling dew upon the mountain side, will become intemperate, for thou wilt expose him to the influence of thy prepared *glasses* of gin-and-water—that other kind of mountain dew—and he, deluded by the seductive title, may ‘sink to rest’ in a state which will make ‘the smiling morn’ very improbable. Instead of the ‘steady beam of opening day,’ there will be the usual giddy sensation of everything revolving around him; and the time will soon arrive when ‘the sun’s eye’ will have ‘a sickly glare!’ Then, when from his flushed and inflamed countenance nothing but *red rays come*, how wilt thou photograph, my friend?”

My correspondent then sketched me the leading features of an idea he had for a “cold spring” or patent pump-water process, in which the handle was to play an active part.

I had another letter which was not from so severe an abstainer. A portion of it was very bad to decipher. I give it as written:—

“MY DEAR SIR,—I saw your beautiful and novel discovery in the Journal, and felt at once anxious to try it. So I have made arrangements to give it a trial this evening; and am just waiting for a friend, Mr. Benjamin Beery, one of our excellent amateurs here, to join me. We are intending to try some transparencies—but here he comes! Will finish this letter in an hour or two, when I hope to be able to give you my favourable opinion of your process.

“12 o’clock.—Just been trying your pro’chess—like it very much. I’tsh jollyisht pro’chess ev’ was. Jove! y’ know itsh first-rate. Ben says it’s first-rate—Ben knows. We got on beau’ful. Developed plates like fun! Lots! Worked very hard, and used deal s’lution. Ben says he spilled lot, an’ some ran down’s sleeve; but *I know where it ran*. Well, really,

y' know, s'lution's not bad to a weed. If y' haven't tried it, do. I've no hesitation'n saying that this pro'chess is the most satisfagt'ry pro'chess ev' tried. Satige'vactry I say—Twig? I could say more, but Ben's making row at my elbow. He says he wants to do 'just one more,' and it shall be pos'tively last glass he prepares t'night.

“Jollypro'chessvery!

“Goodbyeoldf'ller.

“AUGUSTUS LITTLE SCREWED.”

The festive qualities of my preservative syrup provoked the humour of other correspondents, who made many inquiries which were, doubtless, of a facetious character:—

“I find the solution does not *keep*. Perhaps I use too little acid. How many squeezes of lemon do you recommend?”

“In working, do you advise it hot *with*, or cold *without*?”

“Your new process can scarcely be called a *dry* one.”

“The gin being properly distilled, is it necessary to have the water distilled also?”

“I always supposed that ‘flare’ was connected with lenses; but your process yielded me, the other day, a most remarkable case of ‘flare up.’ ”

“The question of photography as a fine art will be now indisputable, for our commonest works will be always *spirituelle*.”

Weak as some of these triflings with a grave scientific subject were, I had many more, much worse, which I will not inflict upon the reader.

One correspondent—a perfect stranger to me—wrote in this modest way:—

“I should like to try your process, but, as I have not

worked at the Art for some time, and as my baths and apparatus are doubtless out of gear, I wish you would send me, for a few days, the principal things required: say, a lens and camera, with stand; a bottle of solution, with bath; and a few plates, a plate-holder (mine's broken), with developer, carefully mixed, and fresh. I should prefer, if I am not asking too much, the plates *cleaned* ready for use. I know the fraternal feeling that happily exists amongst photographers, and the large and generous assistance they are ever ready to render each other, or I should not have ventured to request these little attentions. *I will return the things when done with.* Please be careful in packing; and, as my place is an out-of-the-way one, and I may not be at home when the parcel arrives, perhaps you will kindly pay the carriage. I have mislaid the journal containing your paper on the process, and will feel obliged if you will enclose a *written* account, with complete and full particulars. A tradesman in your town has neglected to forward me a quantity of pickles, and other groceries: may I trouble you to enclose them in your parcel?"

But I will not add more to the list of annoyances I endured from inconsiderate and impertinent correspondents. True, there was much in that correspondence which was pleasant and even amusing; and this somewhat neutralized the disagreeable element. But I longed to be free again. I desired the quiet and repose of the old times. One day I observed that a bran new process had been brought out by somebody else, and I felt that relief was near. And so it turned out. The novelty attracted the attention of my persecutors, and, I suppose, the whole pack went off on the new scent; for they disappeared, and I had the immense satisfaction of finding myself left alone, entirely and for ever extinguished and forgotten.

COMPOSITION—LANDSCAPE PHOTOGRAPHY.

LANDSCAPE Photography! How pleasantly the words fall upon the ear of the Enthusiastic Photographer! What agreeable associations are connected with our excursions in the country! How often have we wandered along the rough sea-shore, or climbed the breezy hill-side, or descended into the shady valley, or toiled along the rocky bed of some mountain stream, forgetting, in the excitement of our pursuit, the burdens we carried, or the roughness of the path we trod! What delightful hours have we passed in wandering through the quiet ruins of some venerable abbey, impressing, with wondrous truth, upon the delicate tablets we carried, the marvellous beauty of Gothic window, of broken column, and ivy-wreathed arch! How pleasant our visits to moss-green old churches, and picturesque cottages, and stately castles, and a thousand pretty nooks, in the shady wood, by the river-side, or in the hedge-rows, where the twining wild convolvulus, the bramble, and luxuriant fern have arrested us in our wanderings.

We may have had little mishaps; some disappointments. Our ingenuity may have been exercised to find a substitute for a broken ground-glass, or the lost ring of a tripod-stand. The rustic population in bye places may possibly have misunderstood our vocation. Our mission not being clear to

them, they have probably taken us for railway surveyors, electric telegraph people, sappers and miners, or, lower still, for rat-catchers, bird-fanciers, or itinerant showmen. The writer of this paper has stood in the street of a small village in Yorkshire, by the side of his camera, surrounded by a numerous circle of wondering rustics, while offers of a pecuniary nature were freely made, by the small capitalists of the party, to secure a "look" at the peep-show. And, indeed, our conduct on some occasions may have very reasonably excited a suspicion that we were even worse characters than those already referred to. As, for instance, when, prowling about some farm-yard, we have seized upon a stray wheel-barrow, hay-fork, or milk-can, to introduce into the foreground of our picture ; the bewildered owner of the property appearing suddenly at his threshold, and seeing his goods and chattels walked off before his eyes, might very rationally doubt the safety of his hen-roost, and entertain the thought of letting loose the dog upon us. We have often appeased the worthy man's fears, however, and have entertained him with a view, on the ground-glass, of his house, and yard, and wheel-barrows, and wife—all wrong side up, the latter, to his amazement, walking comfortably about the premises on her head ! After showing him the inside of the empty camera, without wheels or clockwork of any description (of which he was sure it was full), and attempting a short description of the process, with the hardest possible words, he has walked away muddled and dead-beaten ; and I have no doubt, while pondering over a soothing pipe, has felt that there are more things in heaven and earth than are dreamt of in *his* philosophy. After this, we could always do what we liked with the wheel-barrows.

And thus, good-humouredly bearing our breakages, or losses, or misunderstandings with the agricultural mind, we have made our way; and, on arriving at our resting-place for the night, have spent pleasant evenings in laughing at our adventures, and in the very interesting labour of developing the pictures we have taken during the day. And over the same development, how delightfully anxious—how timidly hopeful—how busy and fluttering—and interested we have been!

We are assuming that the process employed is a dry one, for it is difficult to imagine the same amount of enjoyment in connection with the laborious duties of a tent. The constant occupation of time in preparing, exposing, and completing the plate on the spot, leaves but little leisure for enjoying the beauties of the scene around, while the demand upon the physical powers is something considerable. There are many photographers who remember, with no very pleasant sensations, their voluntary incarceration in the portable tent, or what may not inappropriately be called (remembering its Indian temperature sometimes) the photographic “black hole.”

Now, although our excursions are often very pleasant, we do not always return with really good pictures. The causes of failure are many: they are, indeed, too numerous to mention. It is often the case, however, that we get good photographs free from streak, or stain, fog, or blister—perfect specimens of some photographic process—but still they are not *pictures*: there are grave errors in the arrangement of the subject, or in the subject itself. The object of the present paper is to recommend attention to the selection of subjects, and to mention a few rules which are of use to the painter.

and which possibly may be of some little benefit to photographers also.

In the early days of photography the most commonplace objects satisfied us. The ardent experimenter of that period looked with pride and wonder at the picture of a stack of grim chimneys, taken, perhaps, from his little laboratory window, or his surprising view of a dead brick wall and water tubs. He could count every brick: *that* was the marvel. But the novelty of this soon wore off, and something more was desired—namely, *beauty in the object itself*. So the photographer went to nature, and the hills, and fields, and streams became fitting subjects for his art.

Now, although nature may be said to be always beautiful, yet are there certain groupings of objects in relation to each other—certain agreeable outlines and combinations of forms—which, however difficult to explain in words, are seen at once, and recognized as picturesque; and it is to the selection of these points of interest the artist-photographer would do well to attend. Great advances have been made in the artistic qualities of photographs, yet by far too many show a lamentable deficiency in this respect. Our delightful pursuit will have taken up a new and improved position in relation to art when more attention is given to the subject. Artists admire portions of our pictures—as a foreground, a rock, or tree—but justly complain of a want of completeness as a whole.

Of course the photographer has not the same command of arrangement as the painter. While the latter is but little dependent on the arrangements of external nature, and is left to himself to determine the order in which objects shall be associated, the former, after all, must take the view as it really stands before him. He has merely the power of selecting the

best combination of objects from the most favourable point of view. It would be useless, therefore, where our power is so limited, to mention all the rules laid down for painters, but there are some which will enable us to determine which is the best view, and *why* it is; at any rate, we shall be none the worse for carrying this knowledge with us, and making use of it when circumstances allow us to do so.

On arriving at the locality you are about to photograph, it is a good plan to take a careful survey of the spot. The photographer who plants his camera at the first pleasing object he meets with, frequently finds a much finer view of the same thing afterwards. Take, then, a leisurely walk round, before you decide, dropping a stick or a stone on the grass to mark the points of view you like best. In making your selection, perhaps the following rules may serve as a guide:—

Avoid getting the principal or leading features of a picture perpendicularly over, or horizontally level with, each other. This is an important rule. J. D. Harding, in his work on Composition, says:—“The flat surface upon which the picture is painted, and on which the painter has to invest the ideas of space, is not among the least of the difficulties with which he has to contend. The four lines at right angles with each other, which form the usual boundaries of a picture, present another obstacle to the painter, in consequence of the artificial limits thus assigned to his view; for it is as well known to all the world as to himself, that natural views have no such artificial boundaries. These may appear at first self-evident and unimportant facts; but it will be seen that they lie at the root of many of the difficulties with which the painter has to contend in the composition of his subject. In the composition, the painter makes his first effort to convey the idea of

the separation of the various objects, and to overcome the difficulties I have pointed out as connected with the flat surface on which he paints. To effect this, none of the leading features of the picture should be perpendicularly over, or horizontally level with, each other; because if they be so placed, they either repeat actually, or by suggestion, the horizontal or perpendicular lines which artificially limit his picture, and which require to be concealed as much as possible from observation."

These remarks apply equally well to *photography* as to *painting*, for the *latter* has the same difficulties to contend with as the *former*, namely, the flat surface upon which the picture is taken, and its artificial boundaries. In the case of stereoscopic pictures, where the effect of space is produced in another way, the difficulties are not so great, nor the defects of composition so glaring; for, however confused they appear when the pictures are seen separately, the various objects become disentangled, and fall into their relative positions, when placed in the stereoscope. Where, however, there is no assistance of this kind, as in the case of larger single pictures, you must rely upon the arrangement to prevent confusion of objects, and to give effect of space; and it has been found, from investigation of impressions made by art (not from a study or imitation of nature, for all pictures are equally true imitations of nature), that such result is gained, in some degree, by attention to the rule just mentioned—that by a certain arrangement and separation of the parts of a picture, the effect of space is produced; while, by placing objects immediately under or over each other, or on the same level, the contrary result of flatness is the consequence.

It sometimes happens that the photographer finds it impossible to select his view free from disagreeable lines parallel to the bottom of the picture. In a case of this sort, a deal may be done to conceal them from the eye, in various ways. There is frequently some stray timber or branch of tree which you may make very useful for this purpose, or for objects in the foreground. You may also, if such means are not at hand, take the cap off your lens, and rush into the picture yourself, taking care, however, that you are not made a ghost of by the still unbroken line showing through your body.

Endeavour to occupy every portion of your picture by some object of interest or pictorial value. It often happens in pictures, especially in photographs, that strips from the top to the bottom, or across, may be cut away without removing one feature of interest in it. The plainness of the skies, one of the greatest defects in a photographic landscape, must be as far as possible concealed, by breaking up the space with trees or other objects. Let the foreground of your picture have much of your care and attention. The exquisite detail of rock and bramble, tall reedy grass and fern, or the gnarled roots or trunks of trees, which serve for excellent foregrounds, are also amongst the most interesting and beautiful objects in a photograph. By thus getting near objects at the base of the picture, we give distance to those beyond.

While making these remarks, however, observe that it is possible to crowd too much into a picture, so as to have, indeed, three or four pictures in one. In such cases the eye wanders from point to point, vainly endeavouring to decide which is the principal subject. There is no repose or order where so many objects are dividing the attention and

thrusting themselves forward as principals. Let there then be one leading object, around which the rest are grouped as accessories.

Let the principal feature of interest, whether it be a castle, or cottage, or group of rocks, whatever gives name to, or is to claim the chief attention in the picture, be placed in the most conspicuous position, which is near the centre of the picture; not the point where lines drawn from the opposite corners would intersect each other, but any point equally distant from the sides, though unequally from top to bottom.

But in thus placing it, take care that the objects on either side are varied, and do not resemble each other in size, or form, or weight of masses. For example:—A building in the centre of your picture, and a tree on either side equal in size and appearance, would produce a picture very faulty indeed in arrangement. When the subject is a single object, as a tree, it should be placed near the side.

With respect to the subject of light and shade, avoid broad unbroken masses of shade. Every photographer knows that the shady side of nature is her least attractive side. Amongst our collection of failures, we can find a more formidable array of ghostly forms and half-developed images, arising out of the gloom of shady places, than Mrs. Crowe ever dreamt of in that very sepulchral work of hers—the “Night-side of Nature.” But while avoiding much shade, we must not fall into the other extreme. A picture with the light full in front is flat, and wanting in the agreeable variety and relief which shadows thrown from projecting objects give when the light comes in at the side of the picture. A side-light is therefore preferable.

Never let the horizon of a picture be half the height of the drawing ; but above, or below, as the subject requires.

In taking a view of an avenue of trees, a street scene, or long perspective of arches, do not let the distant opening be exactly in the centre of the picture, but more at one side, and nearer the base of your picture than at the top.

A word or two on the introduction of figures. How rarely do we find in photographic landscapes a nice arrangement of suitable figures ! Why are they always looking full at you ? Why do they always seem to have so little to do with the picture—to be in it, but not of it—standing uncomfortably erect, with their faces to the spectator ? No doubt it arises from the curious fact that people invariably look straight at the camera when invited to stand in a picture, and photographers usually, either for want of time or taste, allow them to arrange themselves in that manner. Let us take a lesson from the painter, who generally finds his figures something to do in the scene that he paints. Remembering the rule I have mentioned, be careful not to place them immediately under any leading object of the picture. Let the “right man” be in the “right place,” and all figures be appropriate to the scene. An old man, or child, in a churchyard—a fisherman on the banks of a stream—a group of rustic children in a village—a farm labourer among his stacks of hay or corn—these are all suitable to the character of the pictures, and in harmony with them. To introduce into such scenes a fine dapper gentleman, in glossy hat and kid gloves, or a lady, whose small circle of parasol above sets off the mighty circumference of crinoline beneath, would be absurdly out of place. And yet we see such mistakes every day. It may be difficult to meet with suitable figures, but that is no reason.

why unsuitable ones should be introduced : the pictures would be better without figures at all.

Besides the rules already mentioned, there are others laid down for painters, but, as they are more remotely applicable to photography, it is, perhaps, unnecessary to mention them. It will well repay the photographer to study works on composition and the principles of art. He will find frequent opportunities of applying such knowledge in his practice, and his productions will have the quality of artistic excellence, without which all other qualities are nothing.



DRY *VERSUS* WET.

THAT the dry processes are more convenient to the wandering photographer in search of the picturesque, can scarcely be denied. The absence of tent or van duties leaves it a more enjoyable occupation. To illustrate the comparative comfort and convenience of dry *versus* wet collodion, I will describe a day's work with the camera in Wales (one of the many pleasant trips that the use of dry plates has enabled me to enjoy).

I had an invitation to spend a few days with some friends amongst the fine scenery of that locality, and not liking to be idle, put up my camera and a dozen plates, intending to use them, if convenient, but not to allow photography to interfere with the pleasures or plans of my companions (two ladies and two gentlemen), who were *not* photographers. Every morning we took a conveyance for a drive, and, "by desire," my camera always accompanied us. On the morning to which I refer, the weather was glorious, and there was that stillness of atmosphere so favourable to photography. As we drove slowly on, there was ample time to look for subjects suitable for the camera. In this occupation my companions joined heartily, declaring it to be quite a "new sensation." The ladies, especially, were positively enthusiastic, and discovered the "sweetest little peeps" (absurdly unsuitable, of course) every few minutes.

When I did stop to take a view, the delay was quite accept-

able to my friends, as it allowed time for a little botanizing, a ramble by the river, or a cool lounge in the carriage under the deep shade of the nearest road-side tree, which afforded a most agreeable shelter from the heat of a July sun. In this way we journeyed on, and about noon entered a beautiful valley, through which ran a mountain stream. To my surprise, in this lonely spot I espied, upon a rocky mound overlooking the river, the familiar "three legs" of a camera-stand, surmounted by a stereoscopic camera. On coming nearer, I found, drawn up on the road-side, a large photographic van, bearing, in outward appearance, a close resemblance to that kind of itinerant habitation in which giants, dwarfs, boa-constrictors, and pig-faced ladies generally reside. Two horses, released from the shafts, but retaining their harness, were cropping at a short distance the grass that the neighbourhood afforded ; while a man, who was evidently there as groom, driver, assistant-photographer, and, as the advertisements say, "to make himself generally useful," was toiling up from the river with a pail of water. Over the roof of the van were hung large cloths dripping with water, the contents of previous buckets. This, I judged, was done to cool the atmosphere within. Just visible in the doorway of the vehicle stood a tall individual, thoughtfully polishing a plate of glass. I approached and saluted this gentleman, who kindly asked me to "walk up." These words, as I ascended the few steps that led to the interior, were so associated in my mind with "be in time ; positively just going to begin !" that I mentally repeated them, and, for a moment, my hand wandered instinctively to the region of my cash pocket.

I found the occupier of the van an amateur photographer,

who was out for amusement and the benefit of his health. With that friendliness which the brethren always display towards each other, we were soon chatting comfortably together. Of course I spoke of the process I was using; and as I looked round upon the extent of his baggage and preparations, I could not help contrasting the smallness of my equipment with the numerous and weighty articles of his. He was very sceptical respecting the capabilities of dry plates; and when I told him that I had taken three pictures that morning, asked me if I was "*sure I had them.*" I replied that I had no uneasiness on that score, as the plates I knew were good, were exposed under favourable circumstances, and therefore could be successfully developed. He still shook his head, and "didn't believe in the dry process." "You see," he said, "I always like to know what I have got."

Well, we drove on up the valley, took some more views, lunched at a small inn, wandered over the ruins of a castle, and turned our horses' heads homewards by the same route we had made in the morning. It was evening as we approached the spot where we had met our friend the photographer. To my surprise, there was the camera, with its slim legs clearly defined against the evening sky, in exactly the same position, and pointing precisely at the same object it did in the morning! I descended from the carriage, and found our photographer and assistant just cleaning up for the day. Their looks were melancholy, and, to my question of "What luck?" I was informed by my "brother" that he had tried all day to take *that* view, and had not yet succeeded. He had been badly treated, he said, by his bath, which had behaved in the most disgraceful manner—he supposed, in consequence of the heat of the weather. It was annoying, he added, but ~~unusual~~—

quite unusual. He turned his back for a moment; and his assistant, taking advantage of that movement, whispered to me, "Oh! it's *always* a-doing of it, Sir! I do believe guv'ner would have drowned hisself in it before this, if it had bin big enough—he's bin so awful aggerawated by it."

The principal portion of the day, it was confessed, had been spent in doctoring and filtering this refractory fluid. I bade our friend good-bye, and, laughingly referring to his words at parting in the morning, asked him if he found any difficulty in ascertaining "*what he had got*" during the day? He looked grim, and defiantly repeated that he "didn't believe in the dry," but added, somewhat more quietly, "he wished he could."

What became of him and his companion that night—they were miles away from any human habitation—I know not. Whether they drove their lumbering van by moonlight to the next village, or retired within the chemically-scented interior to pass the night, I cannot tell, for I met them no more. This I am pretty sure about: that if our wandering photographer found *amusement* in all this, he certainly would not find it *benefit his health!*



THE UNFORTUNATE PHOTOGRAPHER.

THE photographic journals are very serious books. They certainly cannot be classed amongst the light literature of the day. On the contrary, there is much heavy reading in them ; and they contain, perhaps, as awful an array of hard words as you will meet with in any book since the invention of printing. Imagine the young photographer, unacquainted with chemistry and optics, dipping into one of these learned tomes for the first time. What strange things he sees as he travels on through its pages ! Atomic symbols, mysterious diagrams, and words of the most unpronounceable description ; a perfect battery of which opens upon him on the very first page, quite startling him with its rough salute.

Determined to persevere, but a little stunned, he turns over-leaf, and, shivering slightly as he passes the word "glycyrrhizine," gets on a little better for some short time. Suddenly he pulls up at a kind of gate across his path. This obstruction is formed by letters of the alphabet, figures, crosses, and other symbols, and presents an appearance something like this— $\text{NO}_3 + \text{R}_5 = \text{O}_1 \text{A}_2 \text{D}_4$.

After surveying this remarkable object, and trying to spell it backwards and forwards, he at last fancies he arrives at its meaning ; but, disregarding the information it conveys, vaults lightly over it, and proceeds with what follows. Not far, however ; for now he pauses before a diagram with capital letters arranged at various points, and lines running in all

possible directions. As a rule, these lines spread themselves out from points guarded by the capital letters, and his first and very natural impression is, that each of these letters represents a member of the police force, with the ordinary bull's-eye lantern. On referring to the letterpress, however, for information, he finds that his attention is politely requested to the "conjugate foci" at A B, the "refraction of a ray of light" at C, and its "refrangibility" at D and E. And then he reads of "prisms" and "spectrums, chromatic and spherical aberrations," and is for some moments so belaboured by hard words that he stops, quite giddy about the head, and fears that *mental* aberration may possibly succeed this investigation of the spherical and chromatic. So he takes a turn amongst the advertisements, thinking that he never saw so many rays of light about with such little illuminating power.

Becoming more refreshed by a cheerful perusal of the sizes and prices of photographic glass, and one or two other literary efforts of intelligent advertisers, he ventures to return once more to the page where he had left off, and resume his journey; but only to get a very short distance indeed, for turning sharply over the leaf, he meets suddenly a something which "freezes his young blood," and fairly frightens him from advancing another step; for stretched right across his path, like some huge antediluvian monster, coil upon coil, lies the word—

"Methylethylamylophenylammonium!"

Sympathising with our young friend, and believing that a page or two of lighter matter may not be unwelcome to older hands, let us endeavour, for their amusement, to sketch the character and relate some of the mishaps of the unfortunate photographer —the man "*who never succeeds.*"

The unfortunate photographer has got capital apparatus, comfortable operating-room, and means in abundance to follow successfully the practice of the art. He takes in and reads patiently all the books and journals published on the subject, being himself a large contributor to that portion of the latter devoted to "Correspondents," generally signing himself "DESPAIR," "ONE OUT OF LUCK," or some such melancholy *nom de plume*. He not only reads the journals, but faithfully believes everything therein written, and has tried nearly all that was ever recommended by their numerous contributors. The advertisers of fancy apparatus, unfailing receipts, and wonderful inventions, are sure to find in him a purchaser, as an almost unlimited number of useless articles on his shelves testify. He is somewhat inventive himself, and has originated several little things in the way of apparatus; amongst which may be mentioned the infallible portfolio, for changing six sensitive papers in the open air, and which, on the first trial, produced four pictures on two papers, and nothing on the others. The process of changing depending a good deal on the memory, and our photographer not possessing that organ largely developed, may, possibly, have led to this interesting result. The same defective memory often causes him to leave behind, especially on journeys, the most necessary articles. He has been known to forget to take that trifle, the lens, with him, and has discovered the slight omission when miles away from home.

Our unfortunate photographer has worked hard at the two great divisions of the dry processes—the culinary branch, as eggs, honey, gelatine; and the branch of the beverages, as raspberry vinegar, ale, beer, and porter, &c. The latter processes engaged his attention a good deal soon after those

valuable discoveries were given to the world ; and he received much cheerful and generous assistance from his brother photographers, who kindly visited him about that time. As a rule, however, the "brethren" think him a bore, and do not seek his presence more than they can help, for he is constantly bewailing his misfortunes, and pouring into their ears his tale of woe. Alas ! he is always unlucky. His productions suffer from all the ills the art is heir to. His prints are pale and sickly, or tinged with the deep hue of jaundice. His plates are spotted with small-pox and measles. Unwholesome "fogs" pervade the surface of his plates, which no amount of sunshine can dissipate in printing. His temper is tried by irritating "blisters;" while comets, stars, and shooting meteors dart portentously across his skies ! Should some solitary plate escape all these evils, and turn out a good picture, that very plate is sure to be broken while all the rest are spared.

The Fates are always dead against our photographer when most he desires them to be propitious. Never, perhaps, did he invoke their aid more earnestly than once when he invited the object of his affections to have her portrait taken ; for he is in love (perhaps that may have something to do with his blunders), and Angelina is, for the first time, to become the subject of a photograph by his own hand. Often has he "taken" his friends before, but never has he felt half the anxiety which now possesses him. His arrangements have been carefully made, his solutions fresh, and everything in order. And now the lady is seated opposite the camera, and he lingers under shelter of his black cloth, perhaps a little longer than simple focussing requires, gazing upon the fair face as it is reflected upon the screen, and hoping soon to fix

the beautiful image imperishably upon his plates. Final arrangement of attitude being made, our photographer proceeds to prepare a sensitive plate, which is duly exposed and developed. It is found under-exposed, which causes his Angelina to look of an exceedingly dark complexion. Tries again. This time the result is encouraging, but expression not nice—it is not Angelina. He does not destroy it, however, but lays it aside to dry. The next plate, during preparation, slips off the dipper somehow, and disappears to the bottom of a large porcelain bath. After trying to fish it out, without success, he leaves it there. This is the beginning of trouble ; for, after collodionizing the next plate in the most successful manner, it drops off the holder—of course, with its face to the floor. At last a plate is prepared, and the sitter arranged. The slide is placed in the camera, the shutter drawn up, the cap removed, the trembling seconds counted out ; and not until putting down the shutter again does our nervous operator discover that, having placed the slide in the camera the wrong way, the plate has been exposed outwards to the glaring sunshine instead of to the sitter.

Mortified at this mistake, he so firmly fixes his mind upon the slide, that next time he neglects to remove the cap ; and in a subsequent attempt, concentrating his whole energies upon the cap, he forgets to raise the shutter. So he is by this time getting warm and a good deal excited ; and his bottles of various solutions getting disarranged in his dark room, he mistakes one for the other—a mistake which results in vain attempts to develop with cyanide of potassium, to fix with iron, and in a general mixing of everything that oughtn't to come together. One plate is particularly obstinate—it will not develop ; but that is no wonder when it becomes clear to

our photographer that he has been trying the powers of the solutions upon the back of the plate!

And Angelina sits again and again, and is *so* very sorry, and poutingly declares that she really believes this want of success is because she is not handsome enough. Now this little speech is made in the full expectation of being vehemently denied ; and, indeed, it is a nice opening for a pretty little answer ; but our confused photographer, with all his weight of care upon his soul, neglects to make the polite rejoinder. So the lady, a little piqued, and annoyed, too, at this moment (for our hero just then stumbles over her little dog, and, in doing so, deposits the dripping dark slide on her lap, thereby staining certain "breadths" of that "love" of a dress), says something about Augustus being "so very awkward ;" which words, falling from lips so dear, do not by any means add to his comfortable sensations as he returns once more to his room.

During all this time, owing to some defect in the dipper, plates have been steadily accumulating at the bottom of his bath ; and he finds it necessary, as it is almost full, to get them up before proceeding any further. In performing this operation—which is at all times an awkward thing to do—he coaxes them slowly up to the surface, not individually, but in a body—for they will all stick together—when, just as he is about to land them, they slip back again into the bath, and knock the bottom out ; and forth from the fissure creeps the imprisoned fluid, meandering along the trough, down the waste-pipe, and into the bowels of the earth ! One insane attempt to stop its progress with his hands, and then with a cloth lying near, and our unlucky photographer collapses into a chair—on which chair there happens to be then lying a

considerable quantity of glass plates. He scarcely notices the crash which follows—and, fortunately, does not *feel* it—but sits among the ruin gloomily. For all his toil there remains but one portrait—that one he laid aside to dry. He is thankful for *that* now, and reaches it carefully down from a shelf. Alas! there is scarcely a vestige of it left; for, having forgotten to wash after fixing, it now presents a crystalline appearance very beautiful to look at, but most annoyingly out of place—proving that a “thing of beauty” isn’t always “a joy.”

Hot, tired, and dispirited, our unfortunate photographer sits down again, and, in his abstraction of mind, seizes the cloth he had previously used for arresting the progress of the lost silver bath, and with it wipes the perspiration from his head and face. Emerging, after a short time, from his room into the sunshine, in the space of five minutes he becomes as black as the —— Evil One; and screams of laughter from Angelina, mingled with entreaties that Augustus should there and then be “‘taken’ as Othello in plain clothes,” conclude the performances of that unhappy day!

Our unfortunate photographer’s experience with the “wet” process and “tents” would occupy too much room were we to relate it here. Would that we had time and space to tell how, encamped in fields, and focussing with cloth-enveloped head, the angry bull has charged him in the rear, driven him ignominiously away, and laid his tent desolate! How, encamped by streams, and during some temporary absence, the rising tide has floated the little fabric slowly away on its bosom, and he has seen it no more! Or, on the breezy hill, whereon he pitched his tent, how the

wind has made strange sport of it; and, with our photographer inside, has blown the whole construction about his ears. Pitiable spectacle! when, attracted by his cries (mingled with many naughty words which cannot be here repeated), the passing rustic has extricated him from the ruins—his hat driven firmly over his eyes, the brim resting upon his shoulders, and the chemicals overturned into his waistcoat, from whence, trickling coldly down the intervening portion of his anatomy, they drip slowly out at his boots!

Unfortunate, but ever-persevering photographer, may success come to thee at last!



THE PHOTOGRAPHER'S DREAM.

ONE night I attended a meeting of a photographic society, just to keep myself well informed on the various inventions and discoveries which issue, from time to time, from the great band of photographers throughout the world, it being no easy matter to keep up with the rapid march of mechanical, chemical, and scientific progress; and I saw and heard much that was cheering—much that showed we were moving, and, upon the whole, we were rather a wonderful people in this present generation. But this naturally exultant feeling received a sort of chill before I left the meeting; for it was reported that some learned Greek had done centuries ago what we have just been doing—possibly better. What a drop to our vanity! So it comes to this: we are diligently rediscovering what was known a thousand years ago, and it cannot, therefore, be unreasonable to suppose that, at some remote period of time—after our present knowledge has been buried long enough to be forgotten—it will again be discovered, dug laboriously up by enthusiastic photographers, who, in their turn, will indulge in self-glorification like ourselves.

Such fancies filled my mind after I reached home, and I gave way to them as I sat moodily looking into the fire. These views were not very encouraging. Certainly, I thought, there is nothing new under the sun. The great wheel of time, as it slowly turns round, brings the same spokes up again; and so it ever will be. To divert my thoughts, I took

up a volume of Shakespeare, and, strangely enough, came upon a passage which seemed, in my then excited mood, to bear strong evidence of the existence of photography in *Macbeth's* days. It commences—"Is this a dagger which I see before me?" Now, in these days of Shakespeare emendations, when one can, as it were, have any "reading" one likes, why shouldn't the word dagger be written "Daguerre?" Then, with this new spelling of the word, see what light is thrown upon the passage! Look at it now: *Macbeth* is evidently holding in his hand a portrait of his lady, and, as he gazes upon it, says—"Is this a *Daguerre* which I see before me?" Just as we should say—"Is this a 'Williams' or a 'Silvy?'" That the portrait formed the centre of a hand-screen of the period is evident, from the next sentence—"The handle towards my hand;" and then comes that fine burst of rugged and vigorous language of affection—"Come! let me clutch thee!" He would embrace the image, forgetting for a moment it was only this, and not the fair original; and adds—"I have thee not, and yet I see thee still. Thou art not sensible to feeling as to sight." So when I got so far I closed the book, lest I should find the carbon printing in *Othello*, the honey process in *Romeo and Juliet*, or the Wothlytype in *Much Ado About Nothing*.

As I sat thinking of these things, fully determined to send this new reading to Mr. Collier or Mr. Dyce, I was conscious of getting sleepy, and my thoughts became unconnected and fragmentary. In this state, things got oddly jumbled up together. Thus the word "Dyce" seemed to set me thinking that the gentleman of that name was ~~tossing~~ up with Collier whether my new reading should be the correct one or not—a very good way of settling it, I thought—and then off

I went at a tangent with Collier, and that he wouldn't be of any use when the coal measures were exhausted; and this naturally brought me to the distant future, and particularly the future of photography—what it would be like—and would there ever be anything new! I was roused to momentary consciousness occasionally by a falling cinder, or the dropping together of the fire in the grate; but, gradually, I found myself yielding to the pleasing sensation of approaching sleep; and the last thing I remember was a sort of drowsy conviction that there never *would* be anything new. And here I must have gone off.

But it did not appear so, for I was aroused again, as it seemed, by a voice, speaking in a peculiar accent, close by my side. I looked up and beheld without surprise—for nothing I then or subsequently saw in the least astonished me—a little old gentleman. He was dressed in long, graceful garments, classical in shape, and fastened at the waist with a girdle studded with small gold stars. The dress or robe was of violet velvet, with threads of gold an inch or so apart. He had a long, grey, pointed beard, and his hair was brushed up very stiffly above his forehead. The space devoted to his features was long, as if drawn out perpendicularly, giving a round appearance to the eyes, and an expression of chronic whistling to the mouth.

A surprised, jaunty, wide-awake look was the result; and there was a merry twinkle in his bird-like eyes as he asked me "if I felt refreshed?" adding, "If so, it was time to be off."

"To bed?" I asked.

"Why no, not yet, my friend. You seem to forget our appointment at the meeting of the Grand Focus Photographic

Society this evening ; and really it is time to start. My chariot is at the door."

Putting on his head a hat like a white extinguisher, with a very narrow brim, my queer friend led the way, and I followed him, to the door, where I observed a sort of half carriage, half gondola in shape, into which we stepped. The vehicle had no horses attached, but a man jumped up behind when we had taken our seats, and immediately we were in motion. The movement was rapid, smooth, noiseless, and pleasant. I could not see the source of motion. It was evidently below ; and we ran upon rails of a material which gave no sound.

But my attention was attracted to other things. I found myself in a wide, magnificent street, down the centre of which was one long line of trees and fountains, dividing it into two avenues, along which carriages, similar to that we occupied, were gracefully gliding. The vehicles moved in one direction only in each avenue. A broad pavement on each side the street was lined with shops and buildings of great architectural beauty, and the stone of which they were built was of a pure whiteness, upon which no signs of smoke or weather-stains were observable. A stream of foot passengers, gaily dressed, lounged almost noiselessly by, the sound of feet being deadened by the peculiar material of the pavement. The shops were brilliantly illuminated, and, as my eye wandered from one to another of the glittering stores, I noticed — but still with that strange unconcern only met with in dreams—on an elegant signboard the characters, "Established since the year 2780. Aaron and Son. Branch Establishments at North Pole and Central Africa."

The air was warm, and scented with delicate perfumes, and no wind stirred the leaves of the trees. A soft purple

light from above fell upon this gay scene, and, catching the spray of the fountains, made a silver mist among the trees; while the absence of other sounds left the coolplash of the water distinguishable to the pleased ear. On looking up, I found the illumination proceeded from hundreds of little points or stars of light, dotting the darkness of the sky, while a vast arch of glass, spanning the space above all, was just discernible as it here and there reflected back the flash. Surely, this was a lovely scene; and, somehow, I seemed to be enjoying a most delightful combination of the Crystal Palace, the magnesium light, kamptulicon, and Moses and Son—the whole pleasantly scented by Rimmel's perfumes.

My companion (who had been nodding frequently to acquaintances on the way), now calling my attention to the light above our heads, expressed his opinion that the recent discovery of the metallic illumination was one of the greatest inventions of the "present twenty-ninth century;" and he thought it probable that it might be introduced into the practice of photography—an art almost as recent in its birth. Thus chatting, we arrived at the entrance to a plain, yet chaste, building; and, descending from our steedless carriage, passed through an elegant entrance-hall, and found ourselves in a small lecture-room. In this apartment were some twenty or thirty gentlemen in similar costume to that of my guide, and who bore, more or less, a resemblance to his general wide-awake countenance. They were gathered in little groups, talking, as we entered, but immediately began to seat themselves, and prepare for the evening's business. In the centre of the room was a large square table, on which was piled a perfect pyramid of apparatus, many pieces bearing a strong

resemblance to the familiar shapes I had been accustomed to see in my previous state of existence.

My companion was called to the "chair," and I now heard for the first time that his name was Professor Dump. Previous to occupying that distinguished position, he motioned me to a comfortable corner—my presence seeming to cause no curiosity amongst the members.

After a few formal business matters had passed, the learned Chairman rose, and, addressing the audience, reviewed generally the rise of photography, but more particularly the progress made in that delightful art by the members of the "Grand Focus Photographic Society" during the past year. He was happy to tell them, at that their annual meeting, that much advance had been made; but, first adverting to the early history of the art, he spoke eloquently of the great pioneers who had led the way, and to whom they were so much indebted. There was first the great Searcher of the Sunbeam; he who, from the Pale Ray, disentangled a skein of glorious hues, and showed them the Mystery of Light! And long after him came Guerredag, true transmuter of metals, who made the silver tablet more precious than that of gold, by impressing upon its surface images above all price! And Tallboy, who took these pencillings of light, and spread them, bright and fair, upon sheets of pure and snowy paper. And, later still, Archeri, discoverer of the ethereal fluid and the crystal; he who, in baffling the weird and potent Guardians of the Secret, fell exhausted in the conflict, but, falling, held aloft, for all men's use, the prize he had so valiantly won! But he (Professor Dump) would turn from these mighty names, and come to the present position of the art; and although he could not boast of discoveries like

those to which he had just referred, yet he thought there were several very important things he could mention. Not the least of these was the remarkable advance made in the direction of photography in colours. As yet experimenters had not met with complete success. There seemed to be a good deal of uncertainty in the results, for the colours came sometimes when they were not expected, and didn't come when they were, and they were not always the right ones when they did come, and invariably vanished before anybody could see them. It was curious, too, that only in remote corners of the earth, and to men unknown to fame, were there any "manifestations" at all. But, he hoped, these trifles might be overcome, and the bright hues of nature be added to the other charms of photography. To the mechanical aids and the elaborate apparatus which engage the attention of photographers of the present day, he could proudly refer. He had only to point to the table before him. He hoped to have the pleasure of hearing some of those objects described that evening by the ingenious inventors; but meantime, an instrument which he did not observe amongst them, of very wonderful construction, demanded a passing notice. He referred to the revolving camera. He could not fully describe the instrument, as it was somewhat complicated, and showed surprising inventive power. Indeed, it must have been revolving a long time in the head of the maker before he brought it out in that perfection. Well, he might say, however, that the grand principle in its construction was, that everything about it revolved—the camera revolved—and the lens—and the legs, each on its own axis; and the operator, also, was made calmly to revolve on his. The whole was dexterously set in motion with a handle by a lad, who, if

necessary, could be made to revolve as well. He (the Professor) thought this was indeed a *revolution* in photography ; and he was happy to say the result was as well as could be expected. Indeed, it appeared to answer quite as well as an ordinary camera, which did not revolve ; but, of course, was more difficult to do. He called that "progress," and added, that the inventor's great object being to introduce clockwork, and possibly steam, deserved their hearty sympathy and approval. Such men were the real promoters of photography as a fine art ; and its claims as such could not be long delayed. Then there was the camera called "the pointer," which, he might say, seemed almost imbued with intelligence, for, mounted on its slender legs, and carefully wound up, it would then, like the dog of that name, go forth in search of views, and stop when any nice arrangement of nature came before its artistic eye. Turning from the mechanical to the chemical inventions, he was proud to mention that new concentrated essence of light, which, according to a calculation of Professor Colross, enabled you to carry a million tallow candles in your waistcoat pocket, or rather the illuminating power of about that number of dips. It was supposed—with what truth he could not say—the light was the same which the lonely inhabitant of the moon employed in nightly lighting up that satellite ; but for his part he should be sorry to call it moonshine. He would call members to rejoice with him that the various chemical and other preparations necessary for the pursuit of the art were so admirably prepared and plentifully offered to the brethren. He could not glance at the advertising portion of the journals devoted to photographic lore without feeling grateful to the men who so modestly put forth the claims of their "pure ethereal fluid," and other prepara-

tions, the use of which, they confidently assured them, would give to landscapes the most artistic qualities, and throw the charm of elegance and refinement into portraits of the most ordinary individuals, so that "none need despair;" for, by using the fluid of Huggs, or the metal of Muggs, even the uncouth countenance of the mighty potentate of the Cannibal Isles might be made to wear a soft, lovely, and engaging expression. But he must hasten to close this cursory glance at the year's progress. The learned Professor then made a few further remarks on the onward progress of the art, of its application to many useful purposes, and the wonderful developments it might be expected to assume in the future; and expressed a hope that the crowning triumph was not far distant—that the end was near towards which men were urging their determined way, overcoming all obstacles in the path—that the day so long waited for, so long delayed, would soon brighten into dawn, and photography rise resplendent and perfect by the application and assistance of—steam power! He concluded by regretting that one body of men did not understand the true position of photography. He referred to the painters, who, as a class, were opposed to its recognition as a fine art.

The Professor resumed his seat amidst general applause. When that had subsided, a member, whose name I found was Mr. Dryman, wished to remark that the "revolver" camera, alluded to in the Chairman's address, must not be confounded with a photographic weapon of similar name, which had been in existence some time. He (Mr. Dryman) had never seen anything taken by it, neither had he ever heard of anyone who had. He believed it was a sort of photographic pop-gun or pistol.

Mr. Wetun understood that it had been *discharged* successfully by the inventor, but did not *go off* so well in other hands.

Mr. Lenso thought that the introduction of this kind of weapon in duelling would be a great improvement upon the ordinary and more fatal instrument; for, instead of taking each other's lives, the combatants would only take each other's portraits.

Mr. Wetun: And the *satisfaction* would consist in each man making his opponent as ugly as possible.

Mr. Messe had a little matter to lay before the Society. He had been experimenting a good deal on a new process, which, if it could be carried out, would have advantages. It was this:—Take the usual materials for plate-cleaning, coating, exciting, developing, and fixing; mix them altogether in a bottle, and, after violent agitation, pour the mixture upon the plate, in hope of securing the whole of the processes at one operation. He must say he had, so far, failed, but it was not for want of perseverance; for, he believed, no man had ever got into such terrible difficulties, or made more awful muddles, and come out alive. Without exaggeration, he had gone on with those experiments many times in such a state of extreme personal disfigurement, through getting the “stuff” upon him, that he was sure his own mother wouldn't have known him.

The extremely dejected and piebald appearance of this daring experimenter excited the sympathy and commiseration of the members, as he wearily resumed his seat.

Mr. de Veau had often been inconvenienced by the reversion of the image when taking portraits in the camera. He had hit upon a method of doing away with that difficulty. It was

so simple that he was only surprised it should have been left for him to make the discovery. He merely reversed the sitter, placing him head downward, which, of course, brought him right side up in the camera.

Mr. Askew explained a little apparatus he had made for taking views round a corner. The lens was the chief novelty, the rays of light being *bent* as they entered. The instrument he used in bending them was an ordinary pair of pincers.

This apparatus engaged the attention of the assembly some time, and all agreed that it was impossible for the human mind to conceive a higher state of French polish than the woodwork portion presented. It was a triumph, and was the work of one of the humble members of the Grand Focus Photographic Society. The inventor showed specimens produced by this camera. There was a peculiar lustre and brilliancy about them, which was attributed to the polish, so much admired.

A member introduced the subject of *elation* or blurring, and a lively discussion was soon got up, but did not make much progress, as each speaker generally meant something else from every other speaker ; and thus the debate was chiefly remarkable for a want of clearness, and the frequency of misunderstandings. One gentleman, of a rather ruddy countenance, called the effect spoken of more a *doubling* of the image, and said he had frequently seen it in nature. He particularly remembered, on two occasions—once after spending an evening with some hospitable friends, and again in full daylight, after a wedding breakfast—he had noticed a peculiar confused blurring or doubling of objects, caused, he believed, by *elation*. And if so in nature, he reasoned, it must be so in transcripts of nature by photography. This

seemed reasonable, the subject dropped, and the Chairman called upon Mr. Muffe to read his paper on a method of ascertaining the amount of angle of view any lens would include.

That distinguished member rose, and gave the following description of the plan:—Take a long pole (if you can get one, if not, never mind, it will do just as well without), and place it in the foreground, at an angle (any angle, in fact), and then draw a line (a common clothes-line will do) from the pole to a post in the distant horizon. Put pegs at distances of every half-mile; now shut one eye, and try to discover the plane passing through your optical axis, taking care to discourage any luminous rays from passing that way alone. Now draw another line (this time an imaginary one) at right angles with the other, and on this steadily fix your imagination. Then gently rotate the eye from one peg to the other along the whole line towards the horizontal plane, which is placed perpendicularly, by means of a powerful telescope, in the direction of the wind. Now set in motion, by means of a treddle, worked by the foot, an apparatus for agitating the rope. By this the line is strongly vibrated, the vibrations being registered by an index. Dividing the vibrations by the length of the pole, and again by the distance of the pole from the horizon, the remainder may be of some use in helping you to decide. You have now only to remove all the things, unpack your camera, screw in your lens, and look on the ground-glass, and you will see at once how much of the view the lens will include.

When the description was finished, the apparatus was carefully examined by the members, and much admired for its complexity. The inventor, in reply to a member who wished

to understand it, said he felt somewhat proud to assert that he did not think it possible fully to describe or comprehend the intricate clockwork rope vibrator; indeed, he did not blush to say that it was only imperfectly understood by himself.

The Chairman complimented the inventor, who, in reply, intimated his intention of making an automaton figure, to go through the usual photographic process by clockwork and other mechanical means.

Professor T. O. M. Foole wished to call attention to the human eye, and the impressions left upon it by the last object it chanced to rest upon in life. He had taken an eye from an Egyptian mummy, and had succeeded in restoring it to a moist and soft condition; and then had photographed and enlarged the image. It was quite a success. The photograph was exhibited, and showed a group of Egyptian figures in fierce combat amidst the dust of the desert, with the pyramids in the distance. The owner of the eye had evidently fallen in this encounter. Encouraged by this success he (the Professor) had experimented on the other organs of the senses. He had subjected the tongue of the mummy to microscopic examinations, but had failed to discover what it had had to breakfast on that unfortunate morning which had proved its last. He was more fortunate, however, on inspecting the nasal organ, for he had undoubtedly discovered a powder, which had all the appearance, and much of the pungency, of "Prince's Mixture." (Some of the powder was handed round to the members. Many of them "took a pinch," and as violent sneezing was the result, it was generally believed to be veritable snuff.) Professor Foole, continuing, said, that on examining the tympanum of the ear, some markings were clearly distinguishable. They were in the Egyptian character.

He had showed them to a learned student of that ancient tongue, who, after examining them, showed much reluctance to communicate their meaning, and at the same time was moved with an unseemly mirth, which broke at last into most indecorous laughter. He (the Professor), after a suitable rebuke, which somewhat restored the gravity of the scholar, found that the words, translated into the English tongue, meant, " You jolly old fool, there's one for your nob !" These, therefore, were the last sounds that caught the ear, doubtless spoken by his foe, as the fatal blow was struck which ended the earthly career of the ancient Egyptian. But in those words he (Professor Foole) was sure his hearers, with himself, would fail to discover any cause for the mirth exhibited by the learned translator. On the contrary, was it not a solemn thing to be addressed familiarly and personally, as it were, by a voice silent these five thousand years ? Before sitting down, the learned Professor would mention one other little matter he wished to draw attention to. It was a well known fact that the gold and silver solutions used in the ordinary work-rooms of photographers gave off a certain amount of their bulk in the form of vapour at the usual temperature of the atmosphere, and that that vapour combined with all the objects in the room. Now all that could be secured by simply setting the room and its contents on fire, and searching for the precious metals amongst the ruins. He had reduced to ashes his rather handsome and very complete laboratory, and had been rewarded by obtaining the .007201 of a grain of pure gold, and a trifle more of silver.

After the Professor had ceased, there was quite a rush of members who wished to occupy the attention of the meeting. One rose to describe an apparatus full of cranks, and taps,

and handles, and wheels, and springs ; another to explain something else with ropes, and pulleys, and bands, and straps, and strings ; a third to introduce a process with phosphates, and sulphates, and nitrates, and carbonates ; and yet one more with his prisms, and foci, and axis, and angles, until I was bewildered, and gave up all attempts to follow or understand. At last a member handed round some specimens of a new printing process which, he said, he had discovered ; upon which another member rose to say that it was not new, for he had done the same thing long ago ; and a warm discussion took place.

Now, the specimens produced were of such an imperfect, not to say hideous, character, that it would have been sufficiently astonishing to have found *one* man willing to call them his ; but here were *two* individuals claiming these miserable bantlings as their own. And so, as the friends of each claimant to the discovery joined in the discussion, there was considerable animation, which was rendered still more piquant by many personalities of a sarcastic or facetious character.

In the confusion and noise, I found myself on my legs, vainly endeavouring to make myself heard, for I felt an almost irresistible desire to say a few words. At last there was an interval of comparative silence, and I got an opportunity of saying : " Well, I declare, gentlemen, I did expect better things of you in this age of the world. Why, you are no better than we were in the nineteenth century. I am sure I could find in the journals of that time precisely similar sayings and doings. I had a copy (feeling in my pocket)—yes, I had a copy of THE BRITISH JOURNAL with me to-night—I mean last night—well, no, in 1865—I, really—but oh ! here it is ! "

Instead, however, of the crisp, rustling paper, I drew forth a soft, limp, brown, tinder-like substance, on which I could just—for a moment—distinguish the old familiar title, and then it crumbled away, and there fell to the floor but dust! “Ah! I thought I could have shown you how we used to get on some centuries ago; but, no matter—I only wish to say that, like ourselves, you seem pretty well off for tools; that you have plenty of contrivances, abundance of everything to assist the *mechanical* part of photography, but, like ourselves, you do not seem to talk much about using them intelligently. You have everything, surely, required to take marvels of photographs, but these same ingenious machines will work as willingly upon a wretched subject as upon a good one—upon an ugly brick wall as upon a lovely landscape; and, therefore, you have to direct and apply them to worthy objects. Knowing this, one would have expected that your learned discussions and papers would have turned upon composition and the rules and principles of art, so that this knowledge, added to photographic skill, might guide you in your choice of subject, and enable your eye to see what to adopt and what reject. But I have not heard a sentence this evening on this important subject. Nothing seems to be done to cultivate this taste by spreading information on the question; and thus, while attention is exclusively directed to what is simply mechanical, that which gives immense value to photographs is neglected. The appliances, processes, and contrivances, are not to be despised or undervalued, thanks to those who thus add to our convenience and contribute to our success in that way; but there is artistic knowledge required in using them. They are but tools, as the brush and the colours and the palette to the painter; and can never take the place of the guiding hand or

the thinking brain. It is not brushes and paint that make pictures; it is not processes and cameras that make photographs. In ancient times, gentlemen, during the short intervals of leisure from my other duties, I used to steal away, with camera and plates, to the hills and valleys, and there, I do remember well, my patient search for the picturesque, climbing hill-sides, leaping from stone to stone in rugged water-courses, breasting through tangled underwood, mounting rocks, crossing rivers, anxious to find those lovely nooks which are so often only met in secret and hidden places; for Nature, hiding away her most beautiful things, only reveals them to those who lovingly and earnestly seek them. And, having found, how I have hovered about them! viewed them from this and that point, and have gone round about them, and returned to them again, and have waited for the light, and feared the weather (often disappointed in both!), and have been full of anxieties and cares! But my pains rewarded, the beautiful pictures now my own, I have joyfully shown them to my brethren, and often have I waxed wroth to hear the questions—"What process were they taken by?" "What lens *did* them?" or, "What collodion *took* these pretty scenes?" Process! lens! collodion! Why, are there not, gentlemen, in your day, as in ours, twenty processes, twenty lenses, twenty collodions, that would take views equally well, *the subject being first found?* Worthy subjects are scarce, but they must be searched for and found, or vain will your process be, however perfect—your lens, however good—or your camera, in all its pride of polish, however ingenious. I suppose, gentlemen, you have your dry-plate men, who turn out for a day or two to *do* their six dozen views. We had. Yes; and they filled them too, and so added to the mighty

heap of rubbish which brought disgrace upon photographers and their art. Nature does not show her loveliest things to such careless seekers ; and if she did, they could not see, for they have not the educated eye to discern them. These are the mechanical workers who believe that processes, lenses, and apparatus make pictures. Let the honourable member who just now hoped to make an automaton go through the ordinary processes, pause in his work ; for there will be no originality in it. Let a knowledge of art be spread amongst you by means of these societies ; then will your learned Chairman and yourselves, gentlemen, find the artists begin to appreciate photography, and to recognize in it almost a rival to the productions of their pencils. Then will you look upon apparatus and processes as secondary to——”

But here I raised my arm, pointing to the pile on the table near where I stood, and, catching accidentally a projecting handle with some violence, the whole mass came with a tremendous crash to the floor, causing a cloud of dust to rise, which, tickling my olfactory nerves, I gave a mighty sneeze ! On opening my eyes, which, of course, were momentarily closed during the effort, every soul had vanished, and I found myself sitting shivering before an almost fireless grate, catching cold as fast as possible, at my own home, having just kicked over the fire-irons.

I need not add how soon I was in bed ; but I could not forget for some time the queer mixture of things I saw and heard in my

PHOTOGRAPHIC DREAM.







